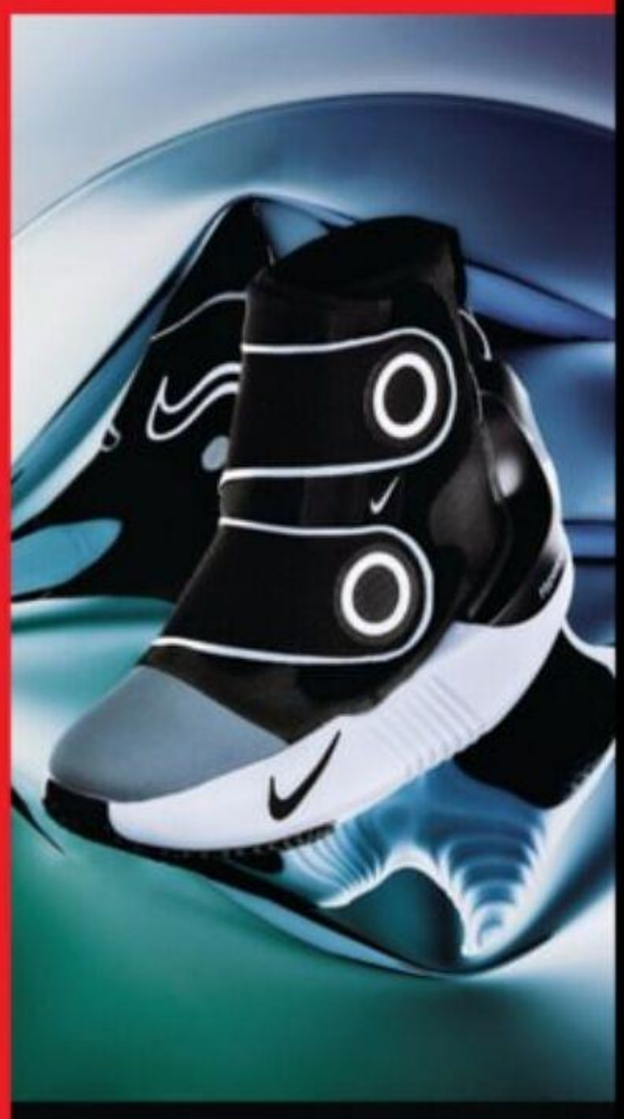
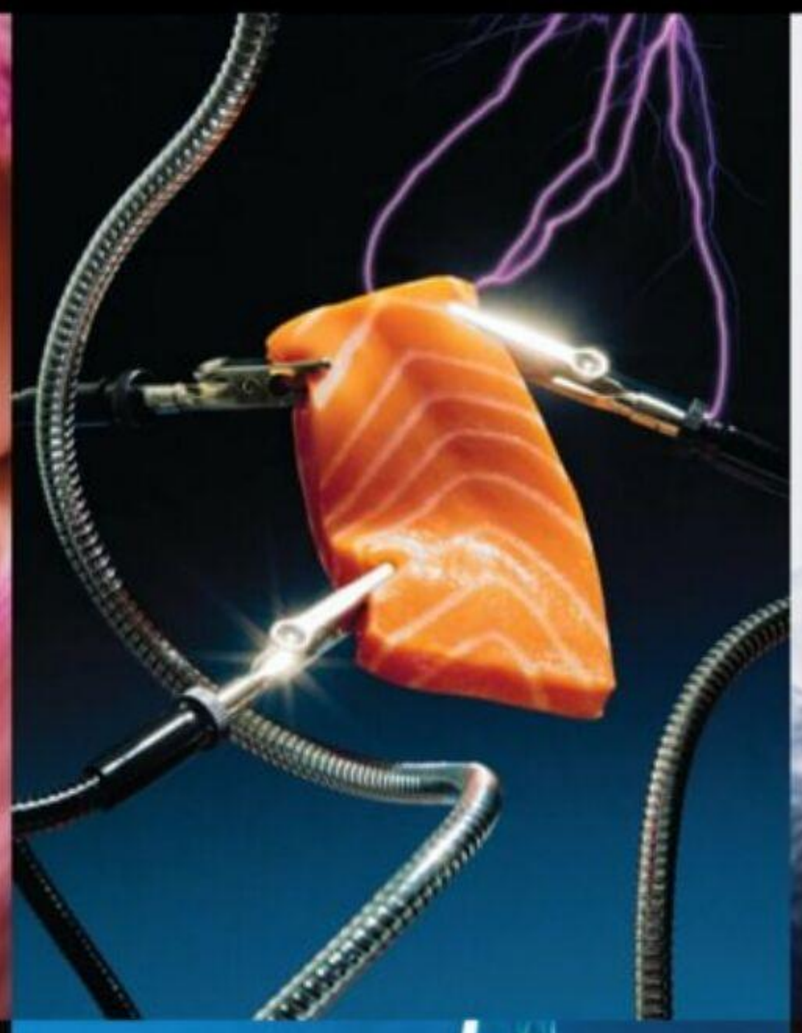
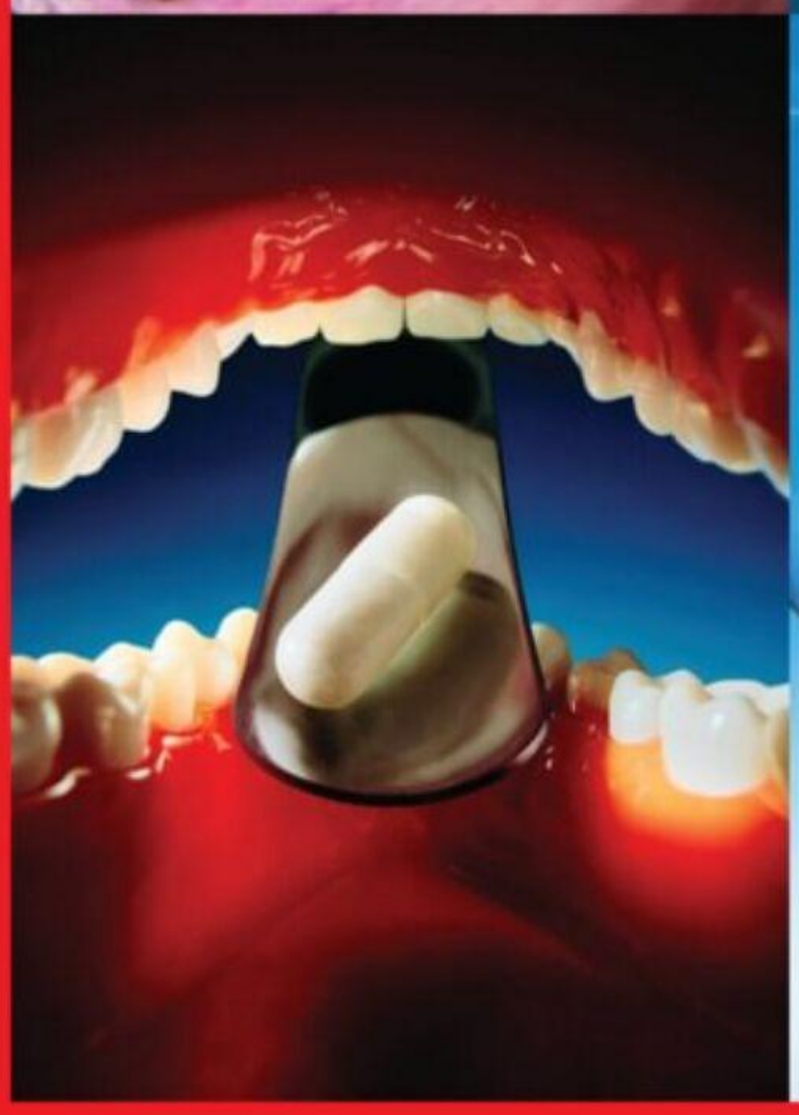
SPECIAL **TIME** EDITION

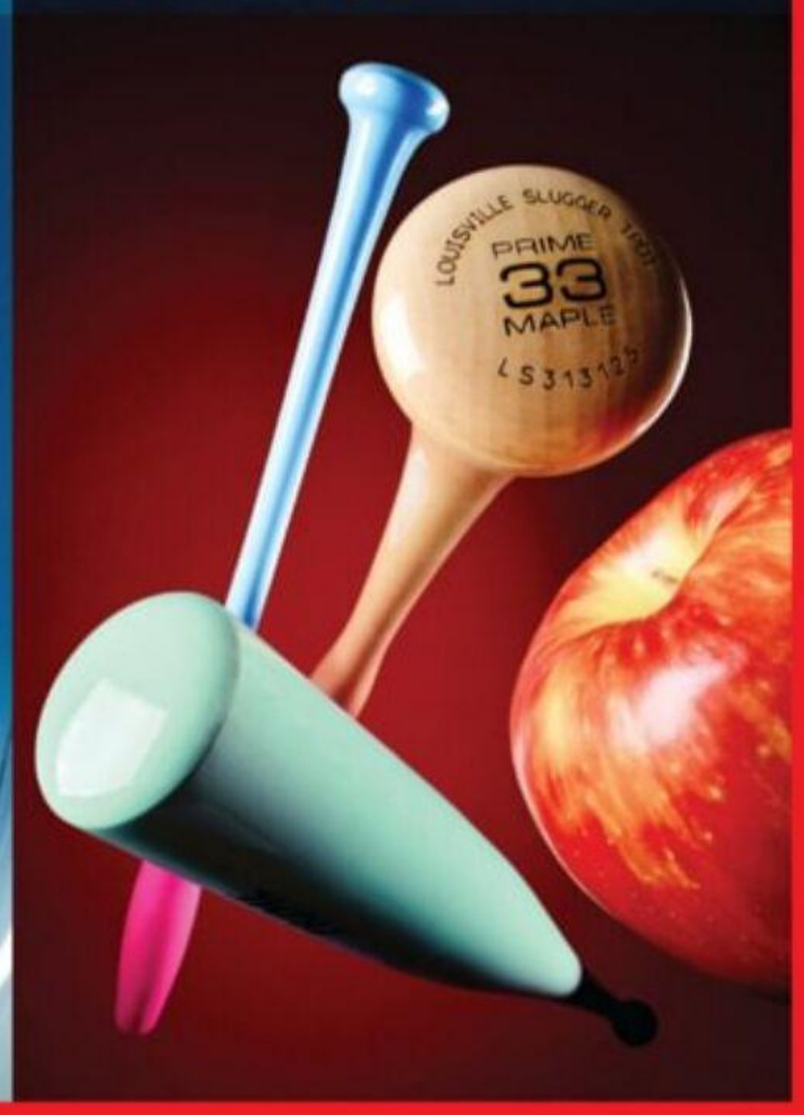
BEST INVENTIONS *of* 2025

MAKING THE WORLD BETTER, SMARTER, AND MORE FUN









LimeGlider
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SPECIAL TIME EDITION

BEST INVENTIONS *of* 2025

HOW WE CHOSE THE BEST INVENTIONS OF 2025

A tradition a quarter century in the making

For each of the past 25 years, TIME editors have highlighted the most impactful new products and ideas in TIME's Best Inventions issue. The first, published under a cover featuring the protracted *Bush v. Gore* presidential vote count in December 2000, highlighted about 35 inventions, including some that feel a world away: the Ricoh RDC-i700 (a digital camera that could post photos to the internet), the first 3D ultrasound imaging for pregnant parents, and a bike with two pontoons that intrepid cyclists could ride on a lake.

Others could just as easily be on the 2025 list. Medtronic's Activa Tremor Control Therapy was featured in the 2000 issue as one of the first forays into deep brain stimulation as a treatment for Parkinson's. This year's issue includes the same company's newly FDA-approved upgrade to the same technology, BrainSense, which continually adjusts to patients' unique tremors.

Across a quarter century, the pace of innovation has only accelerated, and to accommodate that, this year's list features 300 inventions—our biggest list ever. To compile it, we solicited nominations from TIME's editors and correspondents around the world, and through an online application process, paying special attention to growing fields, such as health care and artificial intelligence. We then evaluated each contender on a number of key factors, including originality, efficacy, ambition, and impact.

The result is this collection of 300 groundbreaking inventions—including an AI detection system for teachers, a home sprinkler system for wildfires, the world's biggest rollercoaster, and a humanoid robot that loads the dishwasher—that are changing how we live, work, play, and think about what's possible. ***—Emma Barker Bonomo***

AMERICAN PRINTING HOUSE MONARCH

Braille and graphics on a tablet

Blind students often have to use old textbooks because it takes so long for new ones—not to mention all the other texts students use—to be translated into Braille. Monarch replaces them with a letter-size slate whose 3,840 electromagnetic pins rise to display multiline Braille or tactile graphics, on each of which a touch sensor lets users swipe and tap like on a regular tablet. "Our vision was to build an iPad for blind people," says Greg Stilson, who leads product innovation at the American Printing House for the Blind. A stacked "Lego-style" cell array is the breakthrough that made it possible. Nearly 1,100 units are now in classrooms—assisting about 20% of the U.S. students who need one. **—Chris Stokel-Walker**

TILT BEAUTY GRIP STICK

An accessible, adaptive lip balm

One in four U.S. adults lives with a disability, yet only 4% of beauty brands cater to them. Tilt Beauty founder Aerin Glazer grew up with psoriatic arthritis, and created the Grip Stick lip balm for people with limited dexterity, chronic pain, and other accessibility needs. "Makeup should be easy to open, hold, and apply—for everyone," she says. The first lip product to earn the Arthritis Foundation's Ease of Use Certification, the Grip Stick features an oversized elastomer grip, a magnetic closure, and a patented easy-open tear strip, making it usable one-handed or with limited grip strength. **—Jenna Igneri**

LOTUS RING

Point-and-click smart-home ring

Dhaval Patel has spent his life relying on crutches to walk, and would often leave lights on rather than struggle to get up to adjust them. Eventually, the former Apple engineer quit his job to build Lotus, an accessibility device that lets you turn on or off a lightswitch or TV simply by pointing at it. Press a button on the rechargeable ring—the battery lasts four to six months—and an infrared signal triggers specialized covers that flip switches without any rewiring, apps, or the need to get up. It's like a universal remote you can wear. **—Chris Stokel-Walker**

AEROSPACE

AST SPACEMOBILE BLUEBIRD

Ultra-fast internet, beamed from space

While other space-internet empires are being built with thousands of small satellites, Abel Avellan is taking a different approach. "For a true broadband experience, you can only solve that with size," says Avellan, founder and CEO of AST SpaceMobile, which produces satellites with the largest commercial antennas ever deployed in low-Earth orbit. Five of its BlueBirds are already circling, and even larger satellites planned for launch in the coming months would enable peak transmission speeds of 120 Mbps, new benchmarks for space-beamed internet. Partnerships mean AT&T and Verizon customers will have satellite capabilities built in, while others can purchase variable-rate plans. AST plans to have intermittent service in the U.S. by the end of this year, with global reach in 2026. **—Marina Koren**

VERA C. RUBIN OBSERVATORY

Eyes on the skies

Astronomy's newest telescope is a cosmic paparazzi, taking about 1,000 pictures of the southern sky every night from a mountaintop in Chile. With giant mirrors concentrating starlight into a 3,200-megapixel camera, the Vera C. Rubin Observatory is expected to reveal billions of cosmic objects in the next decade, and could solve some tantalizing mysteries—including whether another planet exists beyond Pluto. Sandrine Thomas, the deputy director of Rubin's construction, calls it a "discovery machine;" in a preview this summer, Rubin snapped more than 2,000 never-before-seen asteroids. The observatory is expected to begin full operations by the end of the year. **—Marina Koren**

FIREFLY BLUE GHOST

New strides on the moon

In March, Firefly Aerospace's Blue Ghost lander became the first private spacecraft to land successfully on the moon. In cooperation with NASA, Blue Ghost carried 10 scientific instruments, including a laser reflector to measure the moon's shape and precise distance from Earth. Firefly plans to launch another lander next year to the moon's far side, followed by launches in 2028 and 2029, with the goal of creating a path for humans to return to the lunar surface. "As more humans return to the moon," says Firefly CEO Jason Kim, "we want them to have the supplies they need to sustain life." **—Jeffrey Kluger**

FIRESAT

Early fire detection

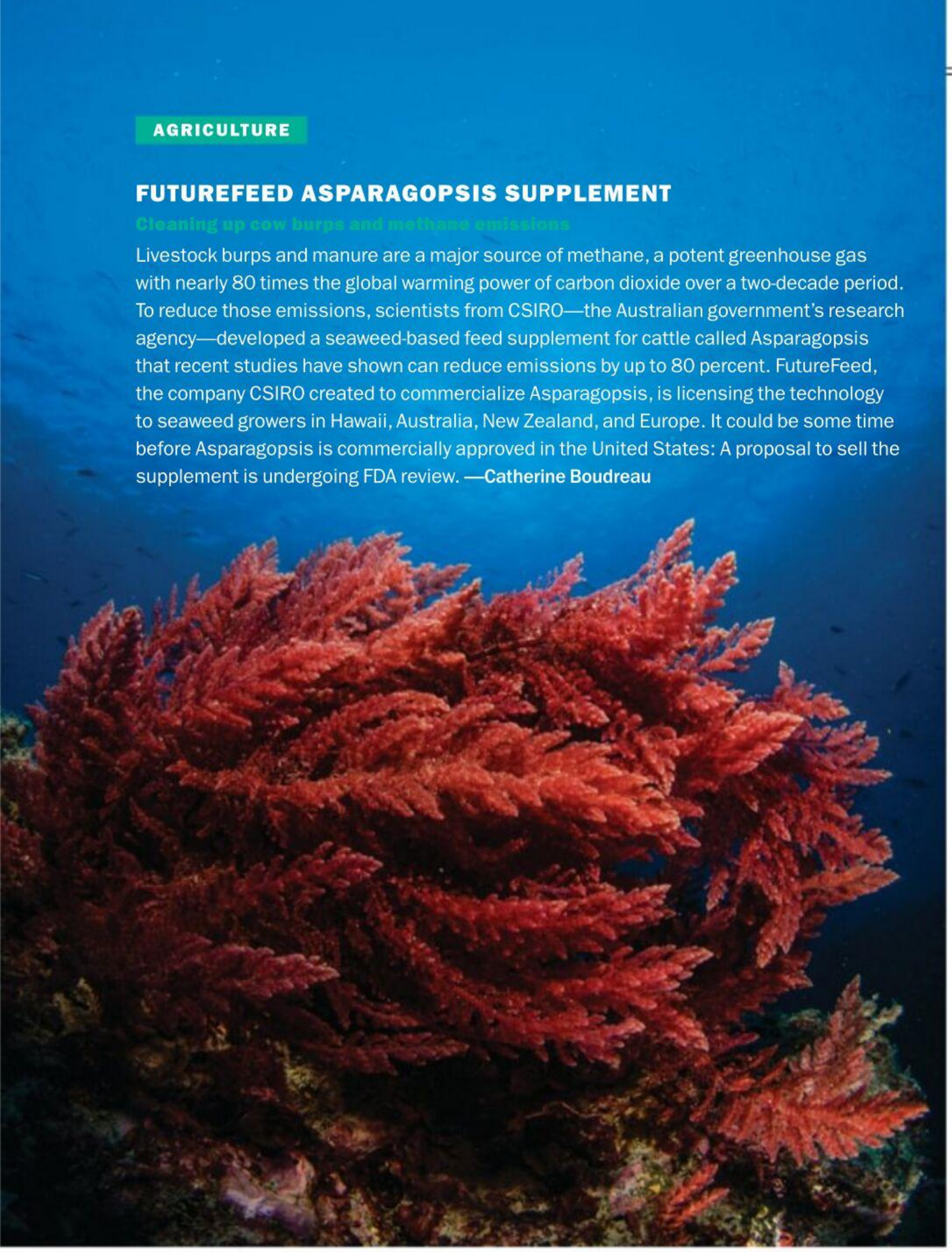
Earlier this year, a small roadside fire in Oregon was detected by a newly launched satellite. It was proof of concept for FireSat, a next-level wildfire detection system that can identify "fires as small as 5-by-5 meters—about the size of a one-car garage—long before they grow into disaster fires," says Brian Collins, executive director of Earth Fire Alliance (EFA). In collaboration with Muon Space and Google Research, the nonprofit plans to build by 2030 a constellation of 50 satellites outfitted with advanced infrared sensors that scan the planet's most fire-prone regions every 20 minutes. Nine fire agencies on three continents are now using the system. **—Jeremy Gantz**

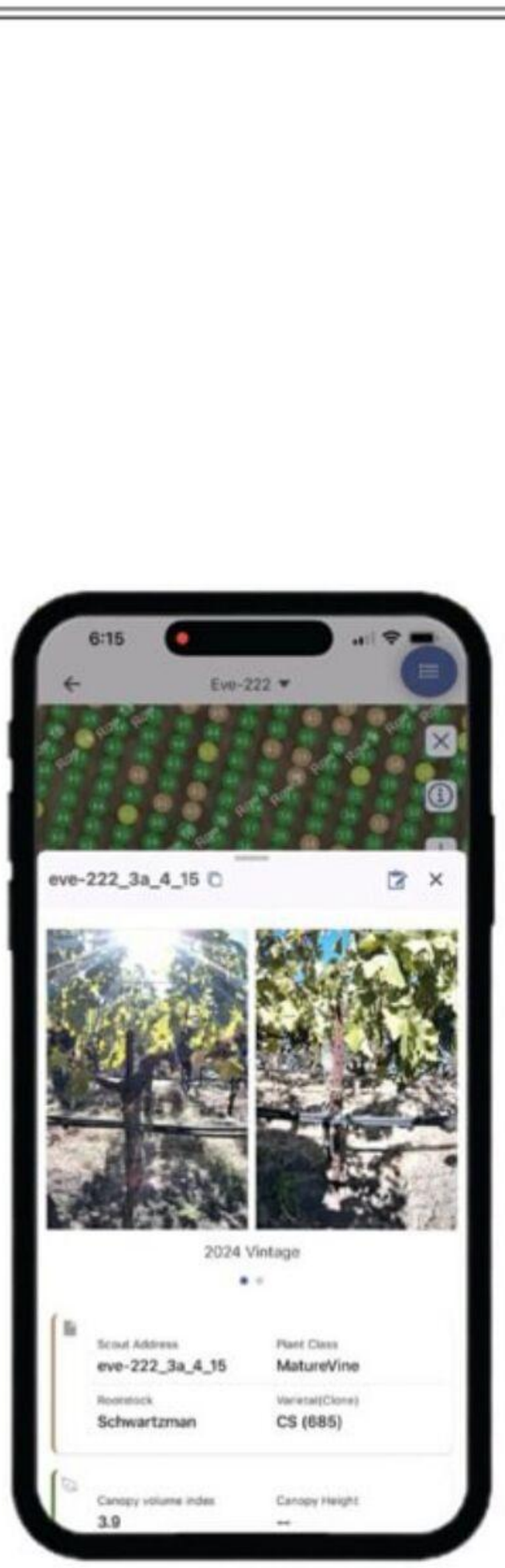
AGRICULTURE

FUTUREFEED ASPARAGOPSIS SUPPLEMENT

Cleaning up cow burps and methane emissions

Livestock burps and manure are a major source of methane, a potent greenhouse gas with nearly 80 times the global warming power of carbon dioxide over a two-decade period. To reduce those emissions, scientists from CSIRO—the Australian government's research agency—developed a seaweed-based feed supplement for cattle called Asparagopsis that recent studies have shown can reduce emissions by up to 80 percent. FutureFeed, the company CSIRO created to commercialize Asparagopsis, is licensing the technology to seaweed growers in Hawaii, Australia, New Zealand, and Europe. It could be some time before Asparagopsis is commercially approved in the United States: A proposal to sell the supplement is undergoing FDA review. **—Catherine Boudreau**





SCOUT GEN 5

Vineyard manager

In 2017, a wildfire nearly claimed the home of Scout CEO Kia Behnia. "Our vineyard saved our house," he says, by acting as a natural firebreak. Now his company's flagship platform, Scout Gen 5, returns the favor by helping farmers keep an eye on every vine. Launched in April, the software analyzes vintners' photos and geolocations—from smartphones to those mounted on the back of ATVs—then uses AI to create an interactive vineyard map, plus a vine-level inventory with insights into each plant's health, maturity, and productivity. "Farmers have this natural intuition," Behnia says. "Scout doesn't take the artistry away—it scales it."

—Nikita Ostrovsky

INNOVEA GLOBAL COFFEE BREEDING NETWORK

Future-proofing coffee

The coffee varieties grown today were developed before climate change and diseases like leaf rust threatened crops. To ensure cups of joe for generations to come, the nonprofit World Coffee Research (WCR) in 2022 formed the Innovea Global Coffee Breeding Network, bringing together companies and government-affiliated research institutions to develop new varieties. This year, researchers in nine countries including Costa Rica and Rwanda have begun breeding trials. Farmers will likely have to wait until 2037 for the new, more resilient varieties, says Vern Long, CEO of WCR, but that's still sooner than ever before. "We're creating the best genetics by working together at scale," Long says. **—Catherine Boudreau**

THUNDERSTRUCK RAZORS EDGE CONCAVES

More efficient harvesting

Large-scale farmers might grow oats, barley, canola, sunflowers, soybeans, and corn. Accommodating this variability can mean expensive delays from changing concaves, the part on a combine that separates grain from chaff. Thunderstruck's founder Jeremy Matuszewski debuted the Razors Edge Concaves last November to save that time. "The [concaves'] bar spacing… is variable based on crop flow, which balances the combine," meaning farmers don't have to change concaves between crops, Matuszewski says. Per field tests, the Razors Edge Concaves increased harvesting speed by 25%, reduced grain loss, and decreased fuel consumption by 40%. **—Jessica Klein**

VANILLA VIDA DATA-DRIVEN INDOOR CURING

Climate-proof vanilla farming

Today, most of the vanilla we consume comes from synthetic sources, not the fruit of the orchids that thrive in the tropical climates of a small number of countries. As rainfall and droughts, intensified by climate change, imperil vanilla farms, Israel-based Vanilla Vida is seeking to bolster global supply of natural vanilla by growing it indoors, in climate-controlled facilities, using imaging and other precise farming technology to monitor the curing process, shorten growth time, and yield richer flavor. The company harvested its first beans in January, and next year will debut a new growing facility in Uganda.
—Marina Koren

ROOTWAVE EWEEDER

Cutting farm chemicals

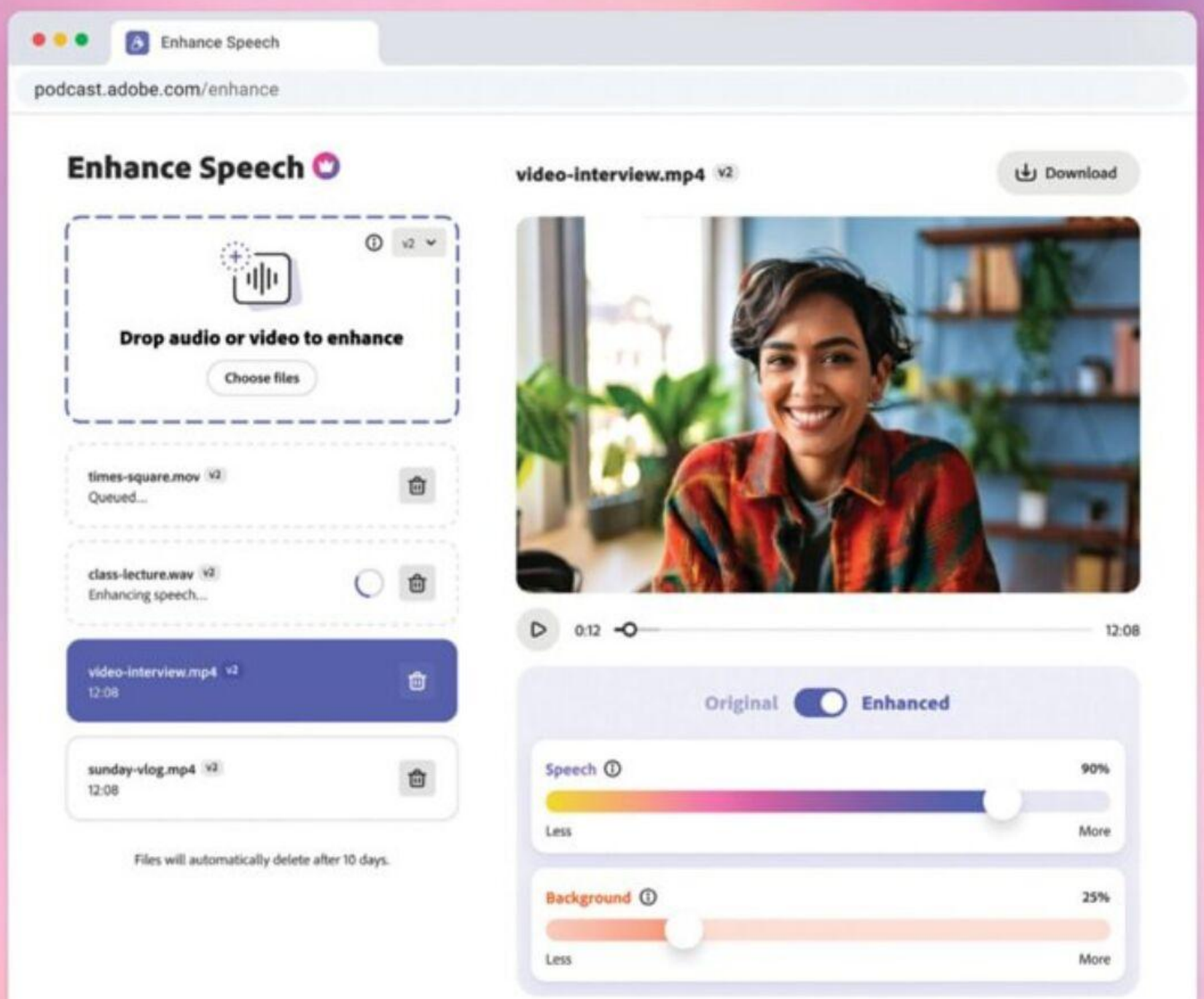
Herbicides can have dangerous drawbacks, so U.K.-based RootWave developed a new nontoxic approach to weeds: The company's tractor-mounted eWeeder zaps them with electricity. Designed for use in vineyards, orchards, and bush-fruit farms, the machine uses high-frequency, low-energy AC waveforms to fry weeds to their roots, killing up to 99% in row crops on a single pass, but leaving the soil and surrounding plants unharmed. The company says it's cheaper on a per-hectare basis than herbicides, which are becoming less effective as plants adapt. And "there's no health or environmental consequences to it," CEO Andrew Diprose says.
—Jared Lindzon

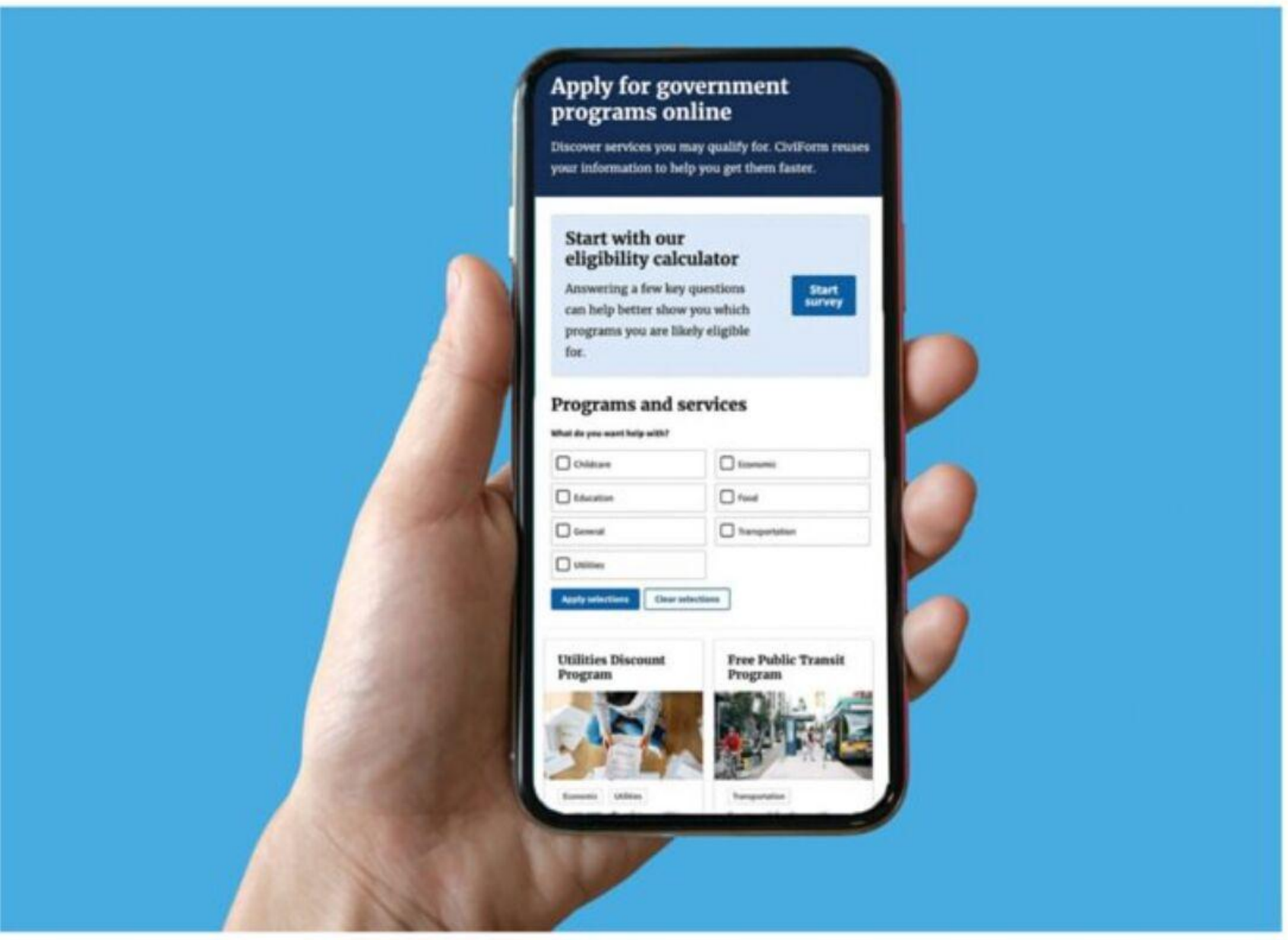
APPS & SOFTWARE

ADOBE PODCAST ENHANCE SPEECH

Influencer audio tools

Joe Rogan, Call Her Daddy, Huberman Lab. Podcasts are booming, and Adobe's latest AI speech enhancement tool is giving them more polish. In November 2024, the company released version two of Enhance Speech within Adobe Podcast, its online suite of podcasting tools. Enhance Speech instantly removes noise, echo, and distortion from audio captured in busy public places or in rooms with poor acoustics. "You can have the most brilliant story to tell, but if it's muffled by background noise or echo, people tune out," Adobe Head of AI Audio Jay LeBoeuf says. Enhance Speech has already enhanced more than 100 million files. **—Matt Alderton**

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Programs and services
What do you want help with?
Childcare
Economic
Education
Food
General
Transportation
Utilities
Apply selections
Clear selections
Utilities Discount Program
Free Public Transit Program

EXYGY CIVIFORM

Simplifying access to public services

Applying for public services often involves navigating byzantine websites and frustrating phone calls. CiviForm is an open-source software that consolidates public program applications into one streamlined, easy-to-use platform. While the project began during the pandemic as a joint effort between Seattle and Google.org, developers recognized its greater potential; the system moved to civic tech firm Exygy for broader deployment in 2023. "Other governments were all struggling with this exact same problem," says Isabel Shaw, Exygy's chief product officer. Now used in U.S. cities including Charlotte, N.C., and Bloomington, Ind., as well as the state of Arkansas, CiviForm serves more than 8 million people. **—Gabriela Riccardi**

BUZZKILL NOTIFICATION MANAGER

Focus for Android users

News alerts, emails, text messages, updates—notifications can be a lot. BuzzKill is an app that lets Android users build plain-language rules to decide, with greater control, which notifications hit their home screens and when. For example, a user can decide to only receive notifications from a WhatsApp group when it mentions a specific person or term, or only buzz once if you get a bunch of alerts at the same time. The app has 25 plug-in-style actions, and more than 20,000 users. BuzzKill also sits locally and never sends data off-device. "I don't want any of your data," says Sam Ruston, the U.K.-based independent developer behind the app. **—Chris Stokel-Walker**

ZOWN DOWN PAYMENT BOOST PROGRAM

More affordable home buying

Saving for a down payment is no small feat. Zown, a digital real estate platform, aims to make home buying more affordable and efficient. Buyers are matched with licensed Zown agents, who are paid hourly based on performance, not commission; when buyers find a home, the company receives 2.5% commission from the seller but returns 1.5% to buyers to bolster their down payment. Except for home viewing, Zown handles deals entirely remotely. "Our secret sauce is building customer relationships digitally," says CEO Rishard Rameez. The Canadian startup expanded to California in May and has completed over $300 million in transactions. **—Novid Parsi**

PINDROP PULSE FOR MEETINGS

Corporate deepfake detection

Pindrop Pulse takes aim at the growing threat of real-time deepfake fraud. "Identity, consent, and accountability are society's contracts. Deepfakes erode all three," says CEO and co-founder Vijay Balasubramaniyan. Pulse for Meetings verifies that the right person is on the other end of a call—audio or video—stopping scams within as little as two seconds of speech. The need is urgent: Pindrop found deepfakes were becoming increasingly common in job interviews, and a single deepfake CFO triggered $25 million in scam transfers last year. Pindrop's product is built on Georgia Tech research and battle-tested across major enterprise deployments. **—Carly Page**

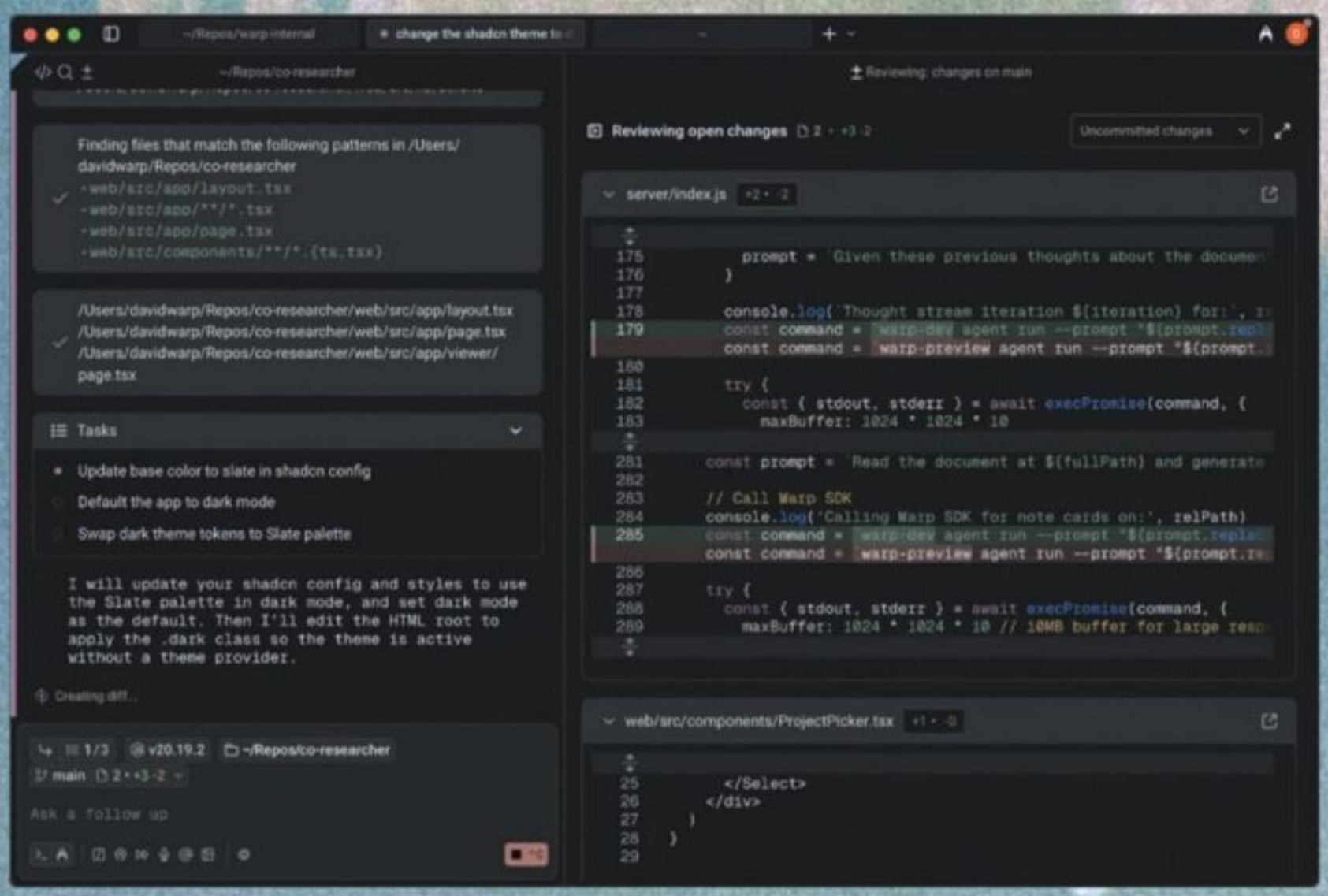
ARTIFICIAL INTELLIGENCE

WARP AGENTIC DEVELOPMENT ENVIRONMENT

Vibe-coding for professionals

The trend of vibe coding— tech novices using AI to write and refine code—hasn't come without catches. For example: Companies are now hiring engineers to fix errors in vibe-coded software. Warp has taken a different approach with an agent-based alternative to traditional coding interfaces. Launched in June, Warp's agentic development environment (ADE) allows software engineers to task AI agents with developing their code, then intervene when they notice errors. "You get to see a really clear plan of what the agent is going to do, and you get to adjust that plan with the agent," says Warp founder and CEO Zach Lloyd. "You're building stuff that's actually shippable." **—Gabriela Riccardi**

Disclosure: Investors in Warp include TIME owner and co-chair Marc Benioff.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UIPATH AGENTIC AUTOMATION

Connecting AI agents

Agentic AI can simplify business, but managing disparate AI agents can also be a job in itself. UiPath's platform helps businesses get their AI agents to work together. With the Maestro layer added to the platform this year, UiPath allows companies to "orchestrate" and manage a range of agents, including those built with third-parties, by ensuring access to the right data sets and enterprise systems, adherence to security guardrails, and adequate human oversight. "We put people in the conductor roles, and most of the operations work is done by agents and robots," CEO Daniel Dines says. UiPath customers include banks, health insurers, and logistics providers. **—Jared Lindzon**

DATASNIPPER DOCUMINE

AI-powered financial auditing

Auditors are the frontline workers of financial integrity, ensuring that businesses and governments comply with crucial, increasingly complex regulations. But much of their workday is spent reviewing documents manually. DocuMine, from the Dutch company DataSnipper, uses AI to automate this analysis, as well to verify data and link each insight back to its source. In April 2025, DocuMine launched within Microsoft Excel, which 1.3 million auditors and most finance professionals already use, offering them a smarter, scalable solution for a $217 billion industry that needs faster, more accurate audits—all with uncompromised transparency. **—Chris Norris**

NVIDIA DGX SPARK

Desktop AI supercomputer

AI compute power has so far been reserved for those with access to pricey cloud clusters. But Nvidia's DGX Spark packs 1 petaflop of compute and 128GB of memory into a small-sized desktop, powered by the company's Grace Blackwell GB10 Superchip. It can fine-tune AI models with up to 200 billion parameters. "Offering petaflops of AI performance on a desktop device is groundbreaking, because we really think it'll unlock the democratization of AI," says Dion Harris, senior director of high-performance computing and AI factory solutions at Nvidia. The computer can be linked to another DGX Spark to churn through bigger models and will cost $3,999, with reservations already open through select sellers. **—Chris Stokel-Walker**

AMBIQ SPOT

Ultra-energy-efficient chips

Artificial intelligence is notoriously power-hungry, hoovering energy as it pumps out information. In battery-operated devices, that becomes restrictive: Manufacturers must choose between energy-sucking AI features and limited power banks. Ambiq's proprietary Sub-threshold Power Optimized Technology (SPOT) chip design lets AI inferencing run locally—without connecting to the cloud—reducing energy use while boosting speed and functionality. "We help [device manufacturers] do things they weren't able to do before," says Charlene Wan, Ambiq's VP of branding, marketing, and investor relations. Currently, Ambiq's chips have been installed in 280 million commercial devices, including smart watches from Garmin and Xiaomi; in July 2025, the company went public. **—Gabriela Riccardi**

DEEPSEEK R1

A low-cost LLM threatening Big Tech

The abrupt appearance of DeepSeek's R1 advanced reasoning model at the start of the year was akin to the "shot heard 'round the world" in AI circles. Major tech companies had spent recent years pouring billions into generative AI projects, products, and infrastructure. Meanwhile, Chinese startup DeepSeek created in just months a model as good as OpenAI's then-most advanced product on industry-standard benchmarks—and claimed to have spent just $6 million to train it. DeepSeek's model also used a fraction of the compute as its U.S. competitors—and it's still free to use. **—Kali Hays**

WINDBORNE SYSTEMS ATLAS

Filling weather forecasting gaps

The best weather forecasting systems still lack data from large swaths of the planet's atmosphere, such as over oceans where major storms often develop. WindBorne is closing data gaps with Atlas, its growing constellation of long-lasting weather balloons that measure temperature, wind speed, pressure, humidity, and other factors. The company feeds the data into its own AI model to produce forecasts more accurate than those of government agencies. This year, the National Oceanic and Atmospheric Administration (NOAA) began buying Atlas sensor data to help fill gaps in the agency's forecasting capabilities, following Trump Administration cuts. Windborne CEO John Dean says he wants to expand the NOAA partnership, but that weather forecasts should remain a public good. **—Catherine Boudreau**

ANTHROPIC CLAUDE SONNET 4

A quicker AI model for the masses

When Anthropic launched its Claude Sonnet 4 model in May, users immediately took to the general-use large language model. "I was honestly surprised by the amount of adoption of Sonnet 4," says Dianne Na Penn, Anthropic's head of product management, research; she says 75% of API users switched to Sonnet 4 within a week of its release. The model quickly became a favorite with coders, capturing more than double the market share of OpenAI among enterprise developers, according to a survey by Menlo Ventures. Post-release, Anthropic significantly expanded Sonnet's context window, allowing it to handle much longer prompts—including up to 75,000 lines of code—and more than double the size of competitors' including OpenAI's GPT-5. The company released Sonnet 4.5 in September, showing even quicker and more accurate calculations. **—Kali Hays**

Disclosure: Investors in Anthropic include Salesforce, where TIME co-chair and owner Marc Benioff is CEO.

BEAUTY

BOLDHUE STARTER KIT

A foundation printer for all skin tones

"We wear makeup because we want to feel confident, comfortable in our own skin, and included," says BoldHue CEO and co-founder Rachel Wilson. It was this desire for complete representation that inspired the company's foundation printer. Launched this spring, the countertop device scans your skin to create a custom shade in under one minute, dispensing personalized blends of a skincare-enriched base and a combination of five color pigments to match all skin tones (and change daily if you get some sun). The lightweight, buildable foundation has a dewy finish and removes all the guesswork from shade-matching. **—Nina Derwin**

THERABODY THERAFACE DEPUFFING WAND

For chilling out

After consumers started using the heavy-duty TheraGun on their face, the company figured it should make a face-focused product that massages and decreases swelling. The result is TheraFace Depuffing Wand, which features hot settings that increase blood flow and cold settings—no refrigeration required—that "seal in the benefits of that fluid movement" to soothe and firm faces, says Tim Roberts, TheraBody's VP of science and innovation. The device, which is contoured to fit under-eye grooves, decreased under-eye puffiness in a company-sponsored clinical study. But it also just serves as an ultra-relaxing bit of self-care. **—Jessica Klein**

EPRES EPHD BOND REPAIR NAIL TREATMENT

Keratin rejuvenator

Repeated polishing weakens fingernails by breaking down their keratin. But most nail-strengthening products on the market only work superficially, "like a landlord…painting over damage," says Epres founder and doctor of materials science Eric Pressly. Pressly co-founded cult hair repair brand Olaplex a decade ago, and went on to launch Epres in 2022 based on his dozens of bond repair patents. The company's new treatment uses just two ingredients—a synthetic form of ethyl acetate (found in fermenting fruits and vegetables) and the emollient diethylhexyl maleate—to repair the broken cross-linked bonds in nails, rebuilding them from within. **—Jessica Klein**

SHARK CRYOGLOW

Cooling LED face mask

To design its first skincare product, SharkNinja convened panels of dermatologists, aestheticians, behavior scientists, and "skinfluencers," says Danielle Lessing, SVP of global product development. Hundreds of prototypes and multiple clinical studies resulted in the CryoGlow LED face mask. Like other LED masks, it uses three types of light to kill acne-causing bacteria and stimulate collagen production, which reduces fine lines; unlike other LED masks, it has cold metallic plates under the eyeholes to simultaneously reduce redness and puffiness. The team took design cues from ski goggles and VR headsets, Lessing says, to make sure the mask would fit snugly yet comfortably. **—Jessica Klein**

L'OREAL PROFESSIONNEL AIRLIGHT PRO

Exceptional infrared hair dryer

L'Oréal's first-ever professional hair dryer was designed in partnership with the startup Zuvi, which released a first-of-its-kind infrared hair dryer a few years ago. This machine, which uses both infrared light and conventional convection, goes further. With more than 150 patents, it features a 17-blade motor surrounded by tungsten-halogen bulbs that produce infrared light to dry hair faster than standard hair dryers. But hair-drying is about more than speed, as anyone who walks out of a salon with dry, frizzy hair can attest. L'Oréal says the AirLight Pro results in smoother hair than convection-only dryers, because infrared light efficiently dries hair surfaces while leaving internal moisture intact. **—Jessica Klein**

ULIKE AIR 10

Cool-to-the-touch laser hair removal

Laser hair removal is one of the most popular cosmetic procedures in the U.S.—and while generally considered safe, both in-office and at-home treatments can cause irritation. Launched last year, Ulike's Air 10 is the first at-home intense pulsed light (IPL) device to incorporate proprietary cooling technology that maintains a contact temperature of 65 degrees Fahrenheit, reducing painful side effects for even sensitive skin types. The device's built-in SkinSensor also detects different skin tones and adjusts the intensity of each pulse accordingly. The Ulike Air 10 claims a 96% hair density reduction in just two weeks. **—Nina Derwin**

HIGHERDOSE MICROCURRENT BODY SCULPTOR

A whole-body skincare device

Red light masks, gua sha, and microcurrent devices are popular home facial treatments, and now HigherDose has put them all together into one device for the body. Launched in June, the crescent-shaped handheld device—when rubbed over legs, abs, and more—supports lymphatic drainage, muscle recovery, and improved blood flow, with the goal of achieving a smoother, more toned appearance, according to the company. "We wanted to create something you'd actually reach for every day—a tool that feels spa-like but uses serious science to help people reconnect with their bodies," says co-founder and co-CEO Lauren Berlingeri. **—Nina Derwin**

PELAGE PHARMACEUTICALS PP405

A therapy to reverse balding

PP405 is a topical, non-hormonal treatment that activates dormant stem cells in hair follicles to regrow hair back to fullness. Clinical trials have shown success, though the drug may not work in the end stages of balding if the follicle is scarred. Pelage Pharmaceuticals is still awaiting further trial results before it can receive FDA approval, but the drug's success could open doors for future therapies. "It's not covering up the symptoms, it's targeting the underlying biology," says Pelage Pharmaceuticals chief medical officer Christina Weng. **—Allana Akhtar**

PHILIPS NORELCO I9000 PRESTIGE ULTRA

A closer shave

This electric shaver introduces SenseIQ Pro, a new version of Philips Norelco's AI-backed technology that helps users find the right shaving pressure via LED guidance lights (orange means too hard, green is just right). Also new is the i9000's Triple Action Lift & Cut system, which lifts hair from its root to cut it just below the skin's surface, up to -.08mm. Flexible heads adapt to facial curves to shave hard-to-reach areas, different modes handle everything from thick beards to foam, and, in another first, the charging station's hood sanitizes the shaver with UV light while the battery refills. **—Leslie Horn Peterson**

CONNECTIVITY & COMMUNICATION

CROWD COMPASS

Friend finder

Chris Dimoff was at a packed music festival when he thought of Crowd Compass, a friend-finding tool for events where cellphone networks are overwhelmed. "I lost my friends for half the night because my phone had no service," says CEO Dimoff. His solution, launched in 2024, is a battery-powered, water-resistant device that uses GPS and long-range mesh radio technology to guide users to each other—no cell or Wi-Fi network required. Each LED on Crowd Compass represents another device in the paired group, adjusting in real-time as users move. The devices can also show nearby emergency services, and allow no-service messaging. **—Matt Alderton**

L'ORÉAL GROUPE MELASYL

A step forward for hyperpigmentation

L'Oréal Group's scientists spent 18 years researching and testing a new skincare ingredient that could help the millions of people worldwide who experience skin pigmentation issues. The result, launched in 2024, is Melasyl, a patented cosmetic molecule formulated to reduce the appearance of hyperpigmentation, improve skin tone, and even out the complexion. Unlike many ingredients that block tyrosinase, the enzyme tied to melanin production, Melasyl helps intercept melanin precursors before they become pigments that collect in the skin, according to L'Oréal Groupe. Melasyl is now incorporated into formulas across L'Oréal Groupe brands including Kiehl's, Vichy, and La Roche-Posay. **—Nina Derwin**

CAILABS TILBA-L10

Laser communications from space

Modern-day satellites communicate with the ground in a decidedly un-modern way—via radio. France-based Cailabs' Tilba-L10 laser ground station avoids radio's downsides. Its optical technology is not disrupted by foul weather, is harder for hostile actors to detect and jam, and has a massive carrying capacity. At the most commonly used frequency, radio waves can typically transmit 1 to 2 gigabits per second (gbps). Tilba-L10 can transmit up to 20 gbps in communication with laser-equipped satellites. "When you go optical, you get much more bandwidth that you can play with," CEO Jean-Francois Morizur says. Launched in 2024, Cailabs now has buyers in countries including Australia, France, and the U.S. **—Jeffrey Kluger**

CONNECTIVITY & COMMUNICATION

NETGEAR NIGHTHAWK M3

5G travel hotspot

Getting a good signal while traveling can be nearly impossible. Netgear's Nighthawk M3 is a portable Wi-Fi router with immense power—providing 5G internet at up to 2.5 Gbps, to up to 32 devices, with a 13-hour battery. The device works with any mobile carrier across 140 countries, including the U.S., "so travellers don't have to do anything," says Netgear product line manager Arodi Dalpathadu. Ports support antennas to boost signal in rural spots, or add Ethernet if needed. It also moonlights as a power bank. The Nighthawk M3 is currently available in most of the world, with a similar U.S. release by early 2026. **—Chris Stokel-Walker**

MICROSOFT HOLLOW-CORE FIBER

Faster data transmission

Data travels across the cloud mainly as light via optical fibers made from solid glass. But that light—and thus that data—travels faster through air. "With hollow core fiber, the glass [has] an air core in the middle," says Frank Rey, General Manager of Azure Hyperscale Networking at Microsoft, which this year showed that its hollow-core fiber achieved the lowest signal loss ever. "And because we can use more parts of the optical spectrum to send data, the transmission and overall total capacity is improved." Current hollow-core fibers extend data transmission up to 1.5 times the distance of today's technology. Microsoft has more than 2,000 kilometers of fiber in production in Europe, mainly as interconnections between data centers, with over 12,000 kilometers planned for deployment in the next year. **—Charlotte Hu**

CONSUMER ELECTRONICS

BELKIN SWITCH 2 CHARGING CASE

Keep gaming longer

The Nintendo Switch 2 is the fastest-selling video game hardware device in U.S. history. There's just one problem: The on-the-go console runs out of juice often. "We knew battery, which was already an issue on the Switch 1, was going to be even more of an issue on the Switch 2," says Logan Olson, Belkin's director of product management for future ventures. Belkin, a third-party tech accessories firm, made a charging case for the console with a removable 10,000mAh power bank—enough to recharge the handheld 1.5 times. The case also has space for 12 game cards and an AirTag. **—Chris Stokel-Walker**

SAMSUNG MICRO RGB

An ultra-realistic TV

Most premium TVs still rely on a single, large white or blue backlight filtered through color layers, a setup that can mute vibrancy and waste energy. Samsung's new Micro RGB TV instead uses individually controlled red, green, and blue LEDs tens of microns wide, giving richer, more lifelike colors and cutting power use by 20%. "Micro RGB is a breakthrough in premium TV technology," says Taeyong Son, EVP of Samsung's Visual Display Business. The first set of Micro RGB TVs ship this year for $29,999 and render images nearly indistinguishable from real life. Samsung's glare-free glass and an on-board AI engine further refine each scene's crispness and color. **—Chris Stokel-Walker**

70MAI DASH CAM 4K

Smarter incident detection

In response to unpredictable urban traffic, several consumer dash cams promise video coverage by merging footage from two fixed cameras into a distorted fish-eye view that's prone to split-second delays. Launched in May, 70mai's Dash Cam 4K Omni offers a single intelligent eye. Rotating a full 360 degrees, the camera combines magnetic sensor-directed gimbals and AI-powered motion detection to spot trouble in real time and record with greater precision. (Recording can be turned off at any time.) "If you're in a supermarket when someone hits your car, this device will notice, lock onto the other car, record high-definition evidence, and send an alert to your phone," says product manager Zhiyi Liu. **—Chris Norris**

HUAWEI PURA 80 ULTRA

A cutting-edge smartphone camera

Huawei's Pura 80 Ultra is a smartphone for people who mostly use theirs for documenting the world around them. "We've developed an amazing camera that also happens to be a smartphone," says Andreas Zimmer, Huawei's head of product in Europe. Launched in July and featuring an industry-first switchable dual telephoto camera, the Pura 80 Ultra mimics the mechanics of a digital camera in miniature. Its two lenses offer 3.7x and 9.4x magnification for sharper shots, its one-inch sensor captures more light, and it can distinguish 1.5 million colors. The result? Richly detailed, vibrantly colored photos and videos in any lighting. **—Novid Parsi**

TECNO MEGABOOK S14

Featherweight laptop

Weighing in at less than 2 lbs., this Chinese-made 14-inch OLED laptop stakes a claim as the lightest laptop on the market. (Apple's 13-inch MacBook Air weighs 2.7 lbs.) But the device offers more than just that superlative. The S14 comes with Tecno's proprietary AI model, which can perform AI-assisted tasks like meeting transcriptions, document analysis, and text- and voice-assisted photo search—all without an internet connection. "What sets this product apart is its ability to work intelligently even offline—whether you're on a plane, in a remote village, or simply prioritizing privacy," says Daniel Kang, Tecno's PC product director. **—Matt Alderton**

CAMP SNAP

A screen-free digital camera

Nostalgic for childhood summers taking photos without filters, parents Brian and Melanie Waldman created Camp Snap, a kid-friendly, screen-free digital camera. A modern take on film and disposable cameras, the Snap is a point and shoot that takes 500 shots per USB-C charge. With schools and summer camps increasingly adopting screen-free policies, the camera provides a valuable alternative. “We wanted our own kids to experience that freedom while still capturing memories,” says Brian, the company’s CEO. This year, the company added a Pro version and a screen-free digital video camera to its lineup. **—Matt Alderton**

NOTHING HEADPHONE (1)

Clarity in sound and design

High-end headphones tend to be made of lightweight plastics in neutral colors. British brand Nothing eschews this mass-market logic with its Headphone (1), over-ear headphones with rectangular, translucent earcups and metal components. Veteran audio firm KEF helped make the headphones sound superb, while Nothing’s industrial designers ensured every physical control is distinguishable by touch alone. Co-founder and CEO Carl Pei describes Nothing’s design aesthetic as “retrofuturistic engineering meets human warmth,” and says most of the company’s customers are young creatives. “We don’t have to be liked by everybody,” Pei says, “But we have to have a group of people who really love us.” **—Craig Wilson**

SHOKZ OPENRUN PRO 2

Next-level bone conduction headphones

Bone conduction headphones—which keep the ear canal open so listeners can enjoy music while staying aware of their surroundings—are having a moment. But the trade-off has historically been audio quality, especially bass. Shokz’s OpenRun Pro 2 “solves a long-standing problem of having to compromise either situational awareness or immersive audio,” says Shokz spokesperson Jayme Schwartz. The standout feature is the brand’s new DualPitch technology, which combines bone conduction for crisp mids and highs with air conduction for richer lows. Since launching in August 2024, Shokz has sold 630,000 units in North America and 1.8 million globally. **—Novid Parsi**

ANTIGRAVITY A1

An immersive, 360-degree drone camera

Antigravity isn't the first company to affix a 360-degree camera to a drone, but it calls itself the first to create a drone designed around one from the outset. The A1 ships with a pair of head-tracking goggles and a reimagined controller that can be used with one hand. That means pilots can get a drone's eye view in any direction they like, creating a more immersive experience. And because the A1 weighs just 249 grams, U.S. buyers—and those in most other markets—won't need to be licensed drone operators to fly one. **—Craig Wilson**

PENTAX 17

Fun film photos for a smartphone generation

Pentax is the first major camera maker to release a new 35mm film camera in almost two decades. The Pentax 17 is a half-frame camera, so users get 72 shots from a 36-exposure film, and its vertical orientation is ideally suited to a generation whose default camera is a smartphone. "This is a quality product designed to give you many years of pleasure," says Ken Curry, president of Pentax owner Ricoh Imaging North America. Having to wait for your film to be developed is part of the appeal, Curry says. "Delayed gratification is a novelty these days." **—Craig Wilson**

BIWIN MINI SSD

Lots of storage in a tiny drive

Tiny gadgets and handheld consoles need desktop-level storage, but a whole lot smaller. Biwin's Mini SSD crams up to 2TB of storage into an NVMe drive the size of a micro-SIM card. "We brought this thing down to the size of a coin," says Will Lin, director of Biwin Storage Technology USA. Its 15mm by 17mm by 1.4mm land-grid-array slab has 3,700 MB/s of read speed in a tiny footprint. The drive comes in three sizes: 512GB, 1TB, and 2TB. While Lin can't disclose clients, major gaming handheld manufacturer GPD has said publicly that it's already using the Biwin Mini SSD. **—Chris Stokel-Walker**

CONSUMER ELECTRONICS

UNIHERTZ JELLY STAR

Very small smartphone

The Jelly Star is proof that smartphones don't have to look the same. Chinese company UniHertz bills the device as the world's smallest Android phone; with a three-inch display, it's about the size of a credit card. The mobile market is "overwhelmed with large screens," UniHertz CEO Stephen Xu says. But Jelly Star also stands out with a backside featuring a colorful translucent casing and LED light that pulses in sync with ringtones, notification sounds and music. Although it can operate the same apps as a full-sized smartphone, some users are embracing the tiny screen as a way to limit their scrolling. —**Leslie Horn Peterson**

FUJIFILM INSTAX WIDE EVO

Analog meets digital

This camera combines slick digital features with instant photography nostalgia, letting you hold memories nearly as fast as you can capture (and filter) them. Building on its Mini Evo smartphone printer, the Instax Wide Evo features a 15.67mm extra-wide lens, the ability to customize light and color gradient using "degree control," and 10 additional lens effects. Users can snap their own pictures or upload them via Bluetooth, then make adjustments on the 3.5-inch LCD screen before using the "print crank" to physically begin the printing process. —**Jared Lindzon**

HISONG AIRSTUDIO S1

Wireless music-making

Most studios are full of cables and cords connecting mics, mixers, and monitors. This "mobile recording capsule" reimagines recording for the wireless age, integrating condenser and enhanced dynamic microphones, wireless in-ear monitors, and an audio interface. The AirStudio S1's low wireless latency makes it possible to create studio-grade recordings anywhere, Hisong claims. Every musician should "experience the joy of creating music without wires, complicated setups, or technical hurdles—just pure creativity," founder Carlos Ye says. (A companion app supports advanced mixing functions; the product is compatible with audio mixing software like Pro Tools and Garage Band.) —**Matt Alderton**

LITTPOPO MICROCAM X1

Pocket microscope camera

Watching their young daughter invent fairytale worlds around fallen leaves, parents-turned-founders Eva Hu and Sam Chan set out to lure kids off couches and into nature with a tool that rewards curiosity rather than screen time. The MicroCam X1 packs a 400x digital microscope, 3-centimeter macro lens, and 4K video camera into a 160 gram, drop-proof shell. "We wanted the device to be very tough for backyard or outdoor exploration," Hu says. The intuitive design—you twist the camera barrel 180 degrees to swap modes—makes it easy to capture microscopic movies on a palm-sized display. Littpopo has already shipped about 2,000 units to families and classrooms. —**Chris Stokel-Walker**

APPLE AIRPODS PRO 3

Live translation in your ears

At a certain price point, active noise cancellation earbuds perform pretty similarly. But Apple's AirPods Pro 3, announced in September, are "a massive leap forward," says John Ternus, Apple's senior vice president of hardware engineering. Beyond removing twice as much background noise as the previous generation of AirPods Pro, tracking wearers' heart rate using a photoplethysmography pulse sensor, and serving as a hearing aid if needed, the headphones' new Live Translation feature can interpret a conversation between French, German, Portuguese, Spanish, or English-speaking friends instantly using Apple Intelligence. Italian, Japanese, Korean, and Chinese are coming by year's end. **—Chris Stokel-Walker**

BELKIN STAGE POWERGRIP

Point and charge

This handy smartphone accessory does double duty while magnetically attached to a smartphone. It's a backup battery that can wirelessly recharge phones (and other devices via a retractable cable and USB port). And it's a content creation tool, mimicking the shape of an old-school camera to make it easier to point and shoot, and with a big Bluetooth-enabled shutter button. It's made for content creators on the go, says Belkin's Logan Olson, and it turns out that's "a large segment of people." The Powergrip can also function as a phone stand and is tripod-compatible. **—Jeremy Gantz**

THE LIGHT PHONE III

A distraction-free 5G phone

Light co-founder Kaiwei Tang used to work for Nokia, but "I quit my job because I don't see the point of making a new phone every six months," he says. Light makes minimalist devices. Its previous phones could do little more than make calls or texts, with an e-ink display and multi-day battery life. Launched in April, the Light Phone III also pares back functionality to minimize distractions, but has more of the features customers expect from a modern-day phone, including a camera, basic GPS navigation, 5G hotspot capabilities, and a Yellow Pages-like directory—but no browser or social media apps. **—Chris Stokel-Walker**

CRYPTO

SWEAR

Tamper-proof video authentication

Deepfake disinformation erodes public trust. Swear's digital DNA fingerprints every pixel, audio sample, and metadata in real time when you take a video, and writes the hashes to the blockchain, so any later tweak—even one single bit—shows up instantly. The tech only adds a megabyte of data per hour of footage, so bodycams and CCTV can adopt it with no hardware changes. "If you're going to become the internet's notary, you have to put your stake on the strongest technologies," says founder Jason Crawforth. Swear is piloting with U.S. security companies like Milestone, Axis, and ESI Convergent, and aims to bake its hashes into every smartphone camera next. **—Chris Stokel-Walker**

DESIGN

HEDGEHOG GO

A powerful, travel-sized dryer

The discomfort of squelchy wet socks or damp gear can be an off-putting problem during outdoor sports, but travel-sized dryer Hedgehog Go, which can be used on boots, gear, and hair, offers solace. The 12.3 oz. dryer with adjustable heat settings pushes out air at more than 60 m.p.h. through its 105,000 rpm fan, and comes with interchangeable nozzles. "We have 11 patents on the different systems we use," says Hedgehog founder Bjorn Holte. The device was funded through Kickstarter and is now shipping to backers. **—Chris Stokel-Walker**

NORDICTRACK ULTRA 1

Top-shelf treadmill

The typical treadmill is all function and no form. The super-sleek NordicTrack Ultra 1 offers plenty of both. Released earlier this year for NordicTrack's 50th anniversary, the machine features metal and hardwood uprights, brass control handles, dual vertical fans for full-body cooling, a control hub decoupled from the deck for vibration-free running, a 24-inch touchscreen that pivots to support non-treadmill workouts, and an eight-speaker surround sound system. Although the bestselling NordicTrack Commercial 1750 also has impressive features—and for a fraction of the price: $2,799 compared to $15,000—it can't compete on style. **—Matt Alderton**

AURZEN ZIP TRI-FOLD PORTABLE MINI PROJECTOR

Entertainment, anywhere

From wallets to laptops, the key to portability is foldability. Entertainment is no exception, according to projection technology company Aurzen, whose new pocket-sized Aurzen ZIP tri-fold projector puts projection in the palm of your hand. It features a patented Z-shaped design, Wi-Fi-free screen mirroring, zero-latency auto-focus, and a full-screen vertical mode tailored to playing TikToks, and it unfolds into a built-in adjustable stand that makes tripods obsolete. "Whether I'm projecting a family slideshow or sharing a quick game session with friends on a road trip, ZIP turns ordinary moments into shared adventures," says Mike Zeng, the company's product director. **—Matt Alderton**

SQUARESPACE BLUEPRINT AI

An AI-guided website builder

Consumer-friendly web design relies on templates, making every website look the same. Blueprint AI, Squarespace's AI-guided builder, asks a handful of questions and instantly spins up unique web designs, including imagery curated by the company's own designers, so users can tweak pages rather than start from scratch. "Great design is inherently human," says chief product officer Paul Gubbay. "We wanted to make sure the user felt AI was enhancing their story, but wasn't taking over for them." More than half of new customers now begin with Blueprint, while a late-September update added in a chat element to make sites even more personally tailored. **—Chris Stokel-Walker**

SAMSUNG THE FRAME PRO

A wireless TV that blends right in

Building on its predecessor's success, Samsung's The Frame Pro, released in April, tries to make technology less intrusive in your home. It mounts with a customizable frame to mimic a gallery wall, blending in with framed photographs and artwork, and can display art from museum collections when asleep. It also has 4K resolution, a speedy 120 Hz refresh rate, and a slew of other tools that make it competitive with other smart TVs. But a sleek-looking television is no good if unsightly cables trail from its frame. The Wireless One Connect Box can sit up to 30 feet away and beam signals to the TV, no strings attached—literally.
—Chris Stokel-Walker

DESIGN

QUIP ULTRA

A smart electric toothbrush

Replacing electric toothbrush heads usually means substituting the neck up. That's "like changing half your car when you need it serviced," says Tom Johnstone, CMO at Quip. The Quip Ultra is a sonic electric toothbrush with replaceable brush "pods." Not much bigger than the bristles, these heads reduce toothbrush waste by 70%, Quip says. A haptic strip on the handle lets users adjust power and set timers as easily as scrolling on a classic iPod, the wireless charging dock and magnetic mirror mount are elegant bathroom decor, and a connected app tracks your brushing habits with feedback for cleaner teeth. **—Jessica Klein**

IMPACT ACOUSTIC SPARK

Sound-absorbing lamp

Lighting impacts how rooms look and feel—and sound, if this pendant lamp is hanging around. Introduced this year by Swiss sound-management company Impact Acoustic, the Spark comes in five sizes and 36 colors, and delivers "exceptional sound absorption," co-founder and CEO Sven Erni says. The lamp's porous material absorbs ambient noise, reducing reverberations to create more acoustically-focused workspaces. What's functional and chic is also sustainable: The Spark is made with felt the company crafts from upcycled plastic bottles, and manufactured without adhesives for easy disassembly and full recyclability. **—Matt Alderton**

TELEPATHIC INSTRUMENTS ORCHID ORC-300

A compact synthesizer from Tame Impala

Tame Impala's Kevin Parker took making music one step further and made a new instrument. Parker's brainchild, the Orchid ORC-300, is a compact synthesizer with a single octave of keys that can fit in a backpack and lets players create complex chords with minimal musical expertise or technical dexterity. Why chords specifically? "Every song's got to have chords," Parker says, "They're the part that slows me down when I'm writing." Although there are plenty of tools to make songs sound polished, Parker says "there aren't many things to help with the actual genesis of the song." The first 4,000 Orchids—released in two drops—sold out in hours. **—Craig Wilson**

WAITING FOR IDEAS PP-1

A sleek vinyl turntable

Conventional record players still rely on delicate tonearms that intimidate casual listeners. PP-1, a sculptural aluminum deck from Paris creative studio Waiting For Ideas, flips things—literally. Place a record upside-down on the device, and a retractable needle extends itself, with internal sensors to set the tempo at 33 or 45 rpm. "I couldn't find a turntable I liked," designer Jean-Baptiste Anotin says, "so I built one that's as simple as pressing play on Spotify." The plug-and-play table weighs about 20 lbs. and began shipping in March. A sleeker PP-2 and matching passive speakers are already on the drawing board, Anotin says. **—Chris Stokel-Walker**

SPEEDO SUNNY G MARINER MIRROR GOGGLES

Stylish swim goggles

Who said swim goggles have to look, and feel, like swim goggles? Eschewing utilitarian design, Speedo's Sunny G Mariner Mirror Goggles both resemble and act like aviator sunglasses. Users say the UV protection encourages them to keep the goggles on their face even out of the water, but they suction well in the pool, landing closer to the cheekbones than eye sockets for increased comfort. Instead of the usual rubber strap that pulls on hair, the Sunny G uses a gentler, adjustable bungee cord. Based on the brand's popular kids' goggles, the often sold-out Sunny Gs offer anti-fog lenses in red, blue, and green. **—Jessica Klein**

INFINITE MACHINE OLTO

A zippy way to get around town

In the world of micro-mobility vehicles, there's now a dizzying array of mopeds, e-bikes, and scooters to choose from. The futuristic Olto combines features of all three in one slick design. Weighing 176 pounds (swappable battery included) and spacious enough for two passengers, it's bike lane-legal and doesn't require a license, registration, or insurance. Its 40-mile battery range can zip you to work as fast as 33 miles per hour. "To get people out of cars, you need alternatives," says Infinite Machine co-founder Joseph Cohen. Olto aims to include several of the best. **—Derek Rose**

DESIGN

YUKAI ENGINEERING NÉKOJITA FUFU

A cute cat to cool your soup

This rechargeable cat robot solves an occasional inconvenience in a very adorable way. Nékojita FuFu blows air to quickly cool off steaming bowls and mugs while perching on their rims. Nékojita—which is Japanese for "cat tongue" and a reference to temperature-sensitive palates—can be set to a constant blow or random intervals, bringing a steaming hot mug to a drinkable temperature in just three minutes. CEO Shunsuke Aoki says the device is designed for parents with young children to reduce "the burden of constantly blowing on food." Nékojita FuFu has shipped to over 5,000 customers worldwide. **—Jared Lindzon**

EDUCATION

SUPERFLUENT

Conversational language learning app

When Superfluent founder Sam Nevada moved to Denmark, he found learning conversational Danish from apps—most of which are vocabulary-based—frustrating. "I could say, 'The bear is having ice cream in a red car,' but I couldn't actually do much more than that," he says. When large language models like ChatGPT arrived, Nevada saw an opportunity to create something more useful for daily life. Superfluent, built on a combination of OpenAI's and Google's models, uses conversational AI to assess users' fluency and create appropriate dialogue scenarios, like ordering a coffee in a cafe, or inviting a friend to a party. Each lesson takes around five minutes. **—Craig Wilson**

SQUIRREL AI LEARNING LARGE ADAPTIVE MODEL

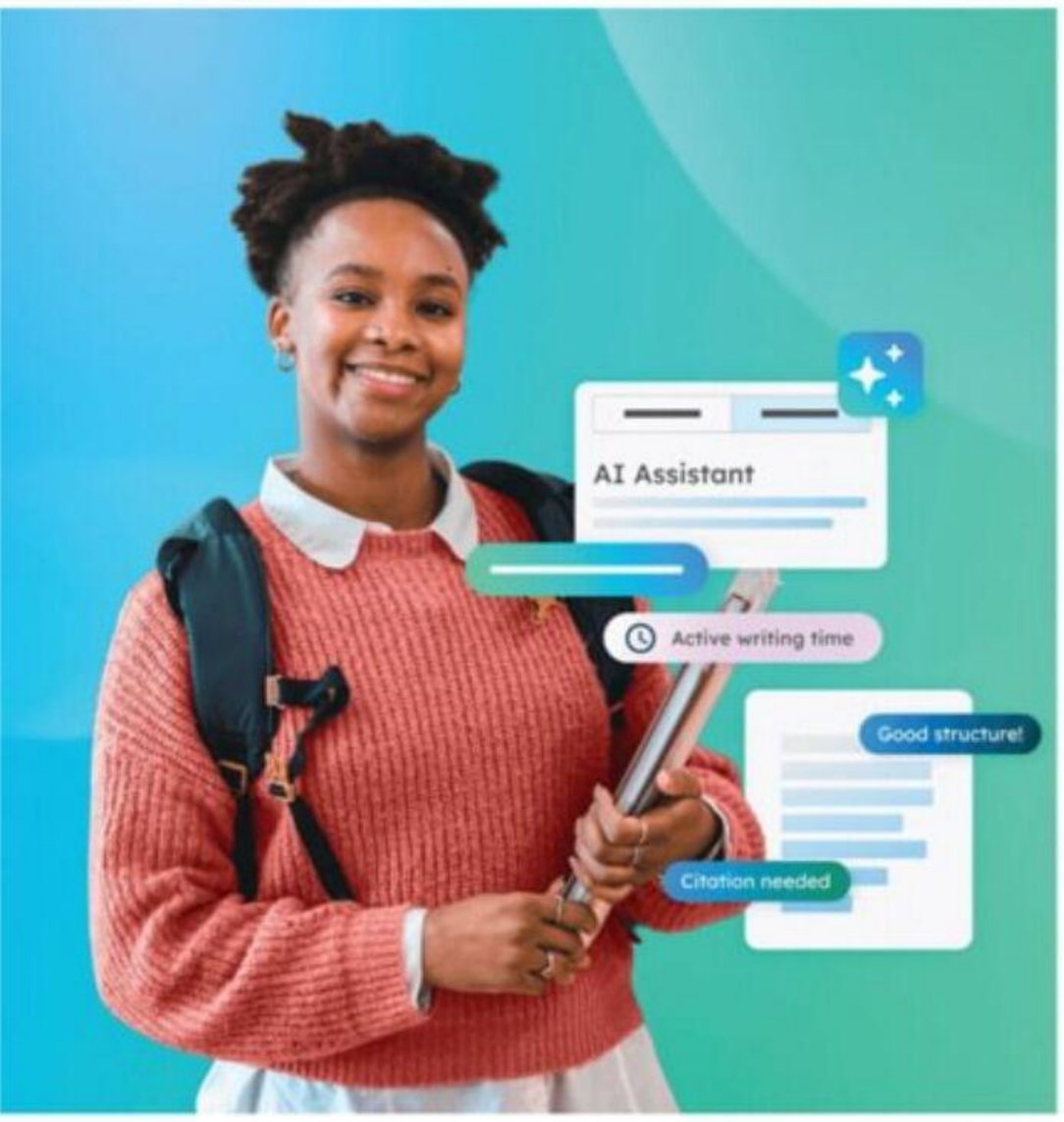
Personalized AI lesson plans

Squirrel Ai's platform is based on what it calls a "large adaptive model," a combination of education-specific AI systems, trained and evaluated by human educators and students in Pre-K through 12th grade. The company has been educating more than 24 million students in China with its AI tutoring—in some cases fully supplanting in-person lessons—and is now expanding into the U.S. Unlike other AI learning tools that partner with schools, Squirrel operates its own learning centers that use AI to personalize each student's lesson plan and testing. The company's expansion may be buoyed, in part, by a severe shortage of teachers: In the U.S.; an estimated 400,000 open teaching positions went unfilled last year. "Our LAM engine acts as a really good teacher, someone who's been a teacher for 20 or 30 years," claims Joleen Liang, president of Squirrel's U.S. division. **—Kali Hays**

MOFT SNAP-ON PHONE STAND & WALLET

Origami MagSafe wallet

Moft's clever magsafe wallet has enough space for two credit cards—or a handful of bills—in the small vegan leather slab that attaches to the iPhone's MagSafe connector, leaving your camera clear for quick snaps. The 6mm thick origami-inspired design also unfolds into three separate angles to act as a stand for your phone on a flat surface. That's ideal for taking selfies, watching YouTube, or scrolling through social media. It comes in 27 modern colors, including terracotta, lavender, and soft avocado. And at just over 2 oz., it's a barely noticeable addition to your pocket.
—Chris Stokel-Walker



TURNITIN CLARITY

Classroom AI guardrail

As concerns about AI-fueled cheating mount, Turnitin is trying to use the technology to support writing students and educators. Clarity, software now being piloted by scores of high schools and universities, features a digital platform where students draft assignments, and—when teachers permit—access approved AI tools that provide feedback rather than answers. Educators can review version histories to see how submitted assignments were created to detect AI use and whether anything was plagiarized. "The teacher has control over how much AI the student can use," says Chief Product Officer Annie Chechitelli. **—Jared Lindzon**

EDTHENA AI COACH

Teacher's aide

Classroom teachers need to learn, too, but often don't get adequate instructional coaching. Edtech company Edthena created an AI Coach, the latest version of which debuted with elementary school math teachers in September. They can record and upload their lessons, and then the platform—validated by researchers at the University of Virginia—analyzes audio and video and offers time-stamped feedback detailing opportunities for improvement. The goal, says Edthena CEO Adam Geller, is to "give teachers clarity on how to grow, the confidence to try new strategies, and the support to keep improving." The research that informed the program was backed by the Gates Foundation. **—Matt Alderton**

ROLI PIANO SYSTEM

Learn to play

A piano may seem out of reach for a lot of people. It's huge, expensive, and the learning process requires years of investment. The Roli Piano system aims to make it more accessible. The colorful, light-up keyboard is educational and engaging; a stand-mounted camera watches learners' fingers and gives personalized feedback like a live teacher would, and the accompanying app is full of popular music. "We asked: What if the piano itself could guide you, interact with you, and grow with you over time?" says Roli senior commercial director Luke Barton. "What if learning an instrument could feel more like play than practice?" **—Leslie Horn Peterson**

EPSON LIFESTUDIO FLEX PLUS

Powerful streaming, anywhere

Epson's Flex Plus isn't your dad's slide projector. Launched in September, the smart streaming projector—part of the company's new Lifestudio range—sets up in seconds, can be easily moved from room to room, and pivots 90-degrees to project onto the ceiling, yet delivers "big, bright, and beautiful" 4K PRO-UHD picture quality to nearly any flat surface, says Epson product manager Kenny Tang. The line features a Bose audio system—the first time the company has integrated its audio into a smart streaming projector—while the Epson Projection Studio companion app lets multiple people project photos and videos in real time. And the option of a soft downward glow turns the projector into a side table lamp. **—Novid Parsi**

FALCON'S FLIGHT

The world's biggest roller coaster

The world's tallest, fastest, and longest roller coaster is almost ready for launch. Falcon's Flight is two miles long, over 600 ft. tall, and—with a 519-ft. drop—hits a top speed of 155 mph. It's just one of 28 rides coming to Six Flags Qiddiya City outside of Riyadh, Saudi Arabia. Falcon's Flight is so big it can be seen from space and so fast that unique curved windshields were designed to protect riders from wind and desert sand. Six Flags Qiddiya City, the first Six Flags location outside North America, is expected to open by late 2025.**—Jared Lindzon**

SOUNDCORE RAVE 3S

On-demand karaoke

Soundcore's Rave 3S AI party speaker transforms any tune into a karaoke backing track. Launched in March, the Rave 3S distinguishes itself with its AI Vocal Removal technology, which allows for lowering or nixing vocals so partygoers can belt their song of choice—from Spotify, YouTube, TikTok, and more—on demand. It also includes two wireless mics, a guitar input, a 6.5-inch woofer, three 2.5-inch full-range speakers, and eight light effects that sync with the beat, while Soundcore's app offers four vocal enhancements. And if you forget the lyrics, it brings the song's vocals up to 50% until you're back on track. **—Derek Rose**

SAMSUNG PREMIERE 5

A 4K touchscreen projector

Samsung's Premiere 5 can be used for much more than movie night. The short-throw projector beams a crisp, up-to-100-inch image from as close as just 43cm away thanks to its triple laser tech, but it can also become a 40-inch interactive touchscreen—which its makers say could be handy for projecting recipes, homework, or yoga onto walls or floors. And its built-in 10W speakers are powerful enough for a cinema-like soundscape during multi-player gaming. "The Premiere 5 delivers an unprecedented, fully-featured entertainment experience," says Kevin Lee, Samsung Electronics' executive vice president of customer experience for visual displays. **—Chris Stokel-Walker**

NINTENDO SWITCH 2

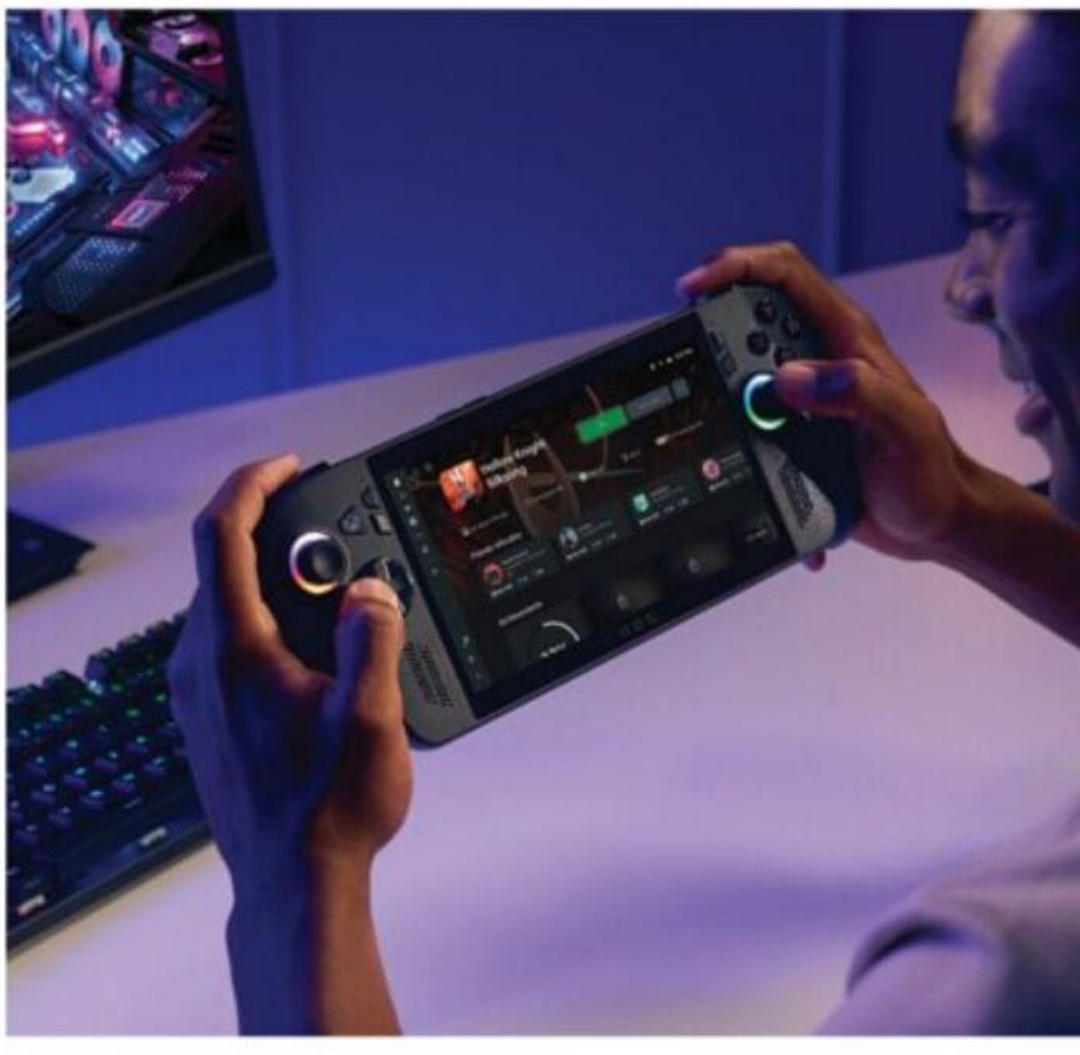
Blockbuster gaming console

The original Nintendo Switch rewrote the rules for portable gaming. Its 2025 sequel increases the power without sacrificing portability. A sampling of its impressive stats: An Nvidia Tegra T239 chip, alongside dedicated ray-tracing and Deep Learning Super-Sampling (DLSS) cores, lets the new model run at 4K on TVs, while the on-device 7.9-inch HDR display runs handheld titles at 1080p and 120Hz, meaning there's no flicker during gameplay. Its 12 GB of LPDDR5X memory also helps keep sprawling open worlds stutter-free. Launched in June, the console sold 3.5 million units in its first week—making it Nintendo's fastest-selling hardware ever. **—Chris Stokel-Walker**

ROG XBOX ALLY X

A gaming PC on the go

Gaming habits have become more portable, and the ROG Xbox Ally X is ASUS and Microsoft's response to the trend. The two companies partnered to build a powerful handheld that's designed to meet players across platforms. "It would have been easy mode for us to make another walled garden," says Jason Beaumont, vice president of Xbox experiences at Microsoft. "But [players] wanted to be able to play their games regardless of where they came from." Launched in October, the handheld can play compatible games from across a user's PC or Xbox library. And because the device runs Windows 11, it can play PC games from third-party storefronts, too. **—Graham Starr**



EXPERIMENTAL

LENOVO YOGA SOLAR PC

A sun-charged laptop

Battery anxiety still chains laptop users to wall outlets. But for those who work away from a power bank, the Lenovo Yoga Solar PC can tap into a more plentiful source: the sun. The PC—still in concept phase—embeds back-contact photovoltaic cells across its lid, harvesting indoor or outdoor light to top up the battery. The 15mm-thin laptop couples 24% conversion efficiency with a "solar-first" algorithm that powers tasks in real time before storing surplus charge. Twenty minutes in direct sun can play an hour-long video on screen. The concept was shown at Mobile World Congress in March, but "we're pursuing this quite aggressively," says Wahid Razali, Lenovo's director of consumer marketing. **—Chris Stokel-Walker**

BOSTON UNIVERSITY WIRELESS MRI COILS

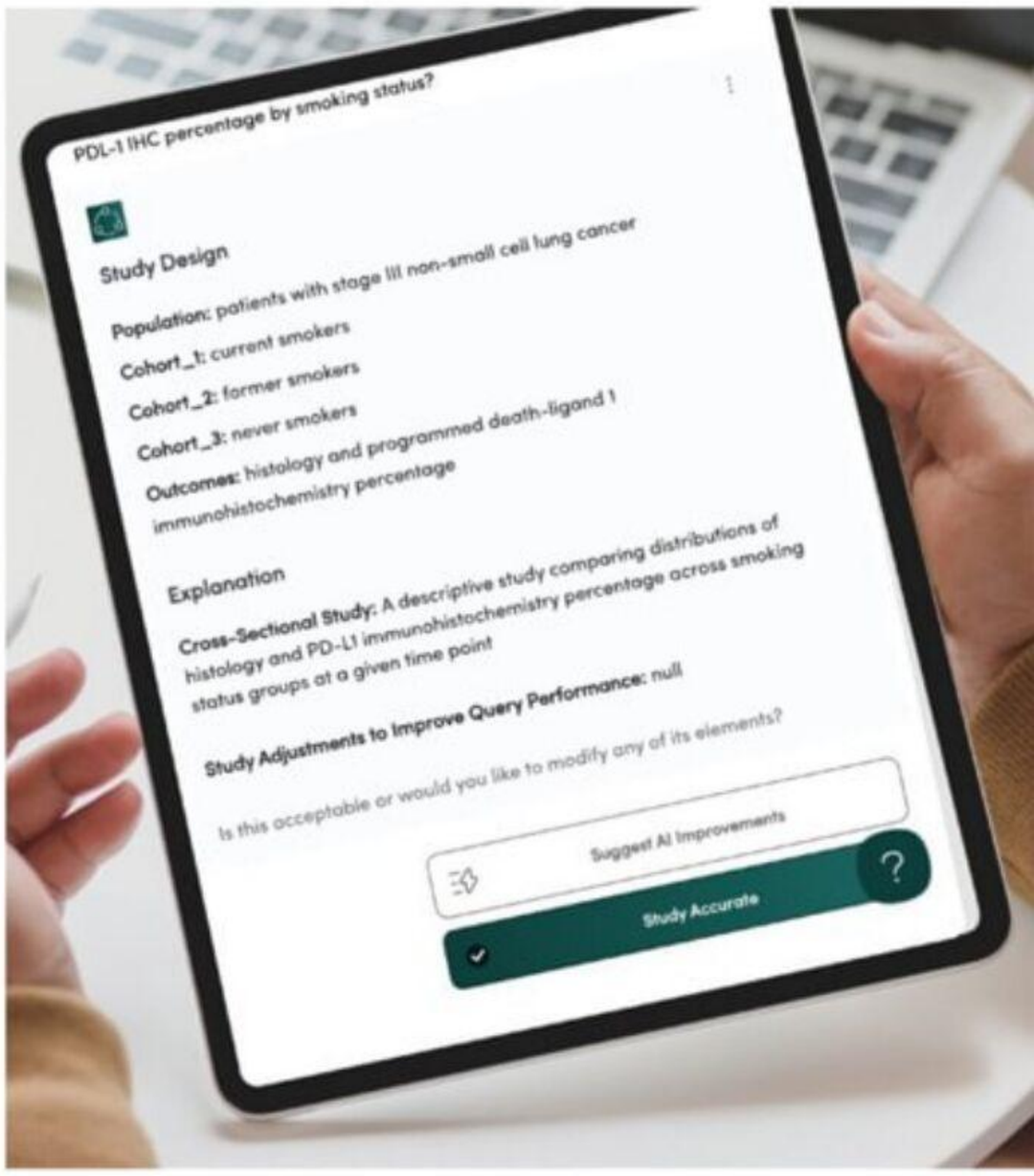
Wearable imaging

MRI scans may soon leave costly, bulky hospital machines behind. Boston University researchers have built bendable wireless coil sensors that attach to the body, weigh less than an AA battery, and cost only $50. The eureka moment was the discovery that "a simple segment of coaxial cable—the same type that brings internet into your home—could deliver outstanding MRI performance," says Professor Xin Zhang, who leads the team developing the wireless technology. That insight could one day allow "first responders using portable MRI to assess injuries on the spot, a scenario unthinkable just a decade ago," she says. **—Joe Mullich**

ATROPOS HEALTH CHATRWD

Clinical queries, on call

While general AI tools are dubious at dispensing medical advice, Atropos Health's ChatRWD offers clinicians AI that doesn't encroach on their Hippocratic Oath. Drawing from a database of 300 million anonymized patient records, ChatRWD lets doctors simulate custom clinical trials in seconds, and claims reliable answers 94% of the time versus less than 10% for general AI models. Just one example of its real-world impact: When anesthesiologists debated whether patients should stop diabetes medications before surgery, a Mills-Peninsula Medical Center study using ChatRWD analyzed 13,000 diabetes patients and found no increased surgical risk, helping avoid unnecessary medication interruptions and rescheduled procedures. **—Joe Mullich**


PDL-1 IHC percentage by smoking status?
Study Design
Population: patients with stage III non-small cell lung cancer
Cohort_1: current smokers
Cohort_2: former smokers
Cohort_3: never smokers
Outcomes: histology and programmed death-ligand 1 immunohistochemistry percentage
Explanation
Cross-Sectional Study: A descriptive study comparing distributions of histology and PD-L1 immunohistochemistry percentage across smoking status groups at a given time point
Study Adjustments to Improve Query Performance: null
Is this acceptable or would you like to modify any of its elements?
Suggest AI Improvements
Study Accurate

NORTHWESTERN UNIVERSITY MILLIMETER PACEMAKER

A tiny heart-helper for infants

A wireless, dissolvable pacemaker could revolutionize treatment for the more than one in 15,000 babies born with congenital heart defects each year. Existing, wired pacemakers risk tissue scarring and other dangers. Professor John Rogers and a team of researchers at Northwestern University developed a pacemaker smaller than a grain of rice that, when injected with a syringe, binds to the heart using absorbable polymers and regulates heartbeat by receiving light signals from a sensor on the skin's surface. It can be built to dissolve after a certain number of days. "It's blurring the distinction between a traditional implant and a pharmaceutical," Rogers says. —**Allana Akhtar**

UNIVERSITY OF TOKYO LAB-GROWN CHICKEN

Nugget of innovation

In the nascent lab-grown-meat space, the products come in tiny pieces—shredded, diced, or melded together. Larger pieces of meat would require a constant feed of nutrients and oxygen to every cell in order to grow. In April, researchers at the University of Tokyo revealed they had done just that, creating what is likely the largest piece of lab-grown meat to date: a nugget-sized chunk of chicken. The scientists engineered a faux circulatory system out of tiny permeable (and inedible) tubes threaded through the meat. Still experimental, the nugget marks a major step toward real slabs sans animal. —**Allana Akhtar**

AIRCO AIRMADE SAF

Fossil fuel-free flights

The name says it all: AirCo pulls carbon dioxide from the air to make AirMade fuel, turning atmospheric gasses into flight-ready energy. The jet fuel meets all existing aviation specifications without fossil fuels. In April, the U.S. Air Force announced it had successfully powered a flight using only the CO_2-derived jet fuel. The test "proved this isn't just lab science," says Gregory Constantine, AirCo co-founder and CEO. "It is real, mission-ready fuel." The company now has commercial airline commitments and $69 million in fresh funding. —**Joe Mullich**

EXPERIMENTAL

NTT LIGHTNING DRONE

Aerial storm protection

Many people take cover when thunderclouds threaten. Experimental drones from Japanese tech giant NTT rush toward them to "tame the lightning," says Senior Research Engineer Atsushi Nagao. In a world-first last December, an NTT drone successfully manipulated the electric field to trigger a lightning strike on itself—and kept flying, thanks to a protective cage. The company aims to one day use these aerial lightning rods to protect cities and infrastructure from strikes. Beyond that, Nagao says the ultimate goal is to harvest renewable energy from "one of nature's most dangerous phenomena," which can "reach temperatures hotter than the sun's surface." **—Joe Mullich**

XRLABS SIM

Practice surgery

When neurosurgeon Ali Rezaei Haddad learned in 2003 that Iranian conjoined twins had died during separation surgery, he vowed to build technology that could prevent such tragedies. Two decades later, his London-based company has developed XRlabs SIM, which uses AI to transform ordinary medical scans into immersive 3D environments where surgeons can rehearse life-or-death procedures. Last year the technology enabled the successful separation of conjoined Pakistani twins Minal and Mirha, allowing doctors to explore the 11-month-olds' shared anatomy in advance and practice the 14-hour surgery. The mixed-reality platform has been used by doctors in the U.K., U.S. and Turkey. **—Joe Mullich**

PLUSAI AND HYUNDAI XCIENT AUTONOMOUS TRUCK

Self-driving big rigs

Quiet, driverless, and powered by hydrogen, a new generation of trucks is about to hit U.S. highways. Hyundai's Xcient Fuel Cell trucks have already proven themselves across 9 million miles in real-world operations, while PlusAI's SuperDrive autonomous system has racked up more than 5 million miles. The companies are combining their technologies to tackle trucking's biggest challenges: cutting emissions, addressing driver shortages, and lowering costs. "This isn't a future technology. It's here, it's working," says David Liu, CEO of PlusAI. When it launches commercially, he envisions truck drivers will move from "grueling shifts to safer, elevated jobs." **—Joe Mullich**

FLOCEAN SUBSEA DESALINATION PLANT

Making fresh water, efficiently

Norwegian startup Flocean is diving deeper for an energy efficient desalination solution: By operating 400-600 meters below the ocean surface (deeper than most skyscrapers are tall), its systems harness natural water pressure to nearly halve the power consumption of land plants. “Instead of noisy, energy-hungry, polluting coastal plants, desalination becomes quiet pods resting on the seabed,” says CEO Alexander Fuglesang. Each pod produces fresh water for about 37,500 people daily. With the world’s first commercial plant launching off Norway’s coast in 2026, Fuglesang envisions a future “where water security is an engineering choice, not a diplomatic vulnerability.” **—Joe Mullich**

QUANTUM BRILLIANCE QUOLL

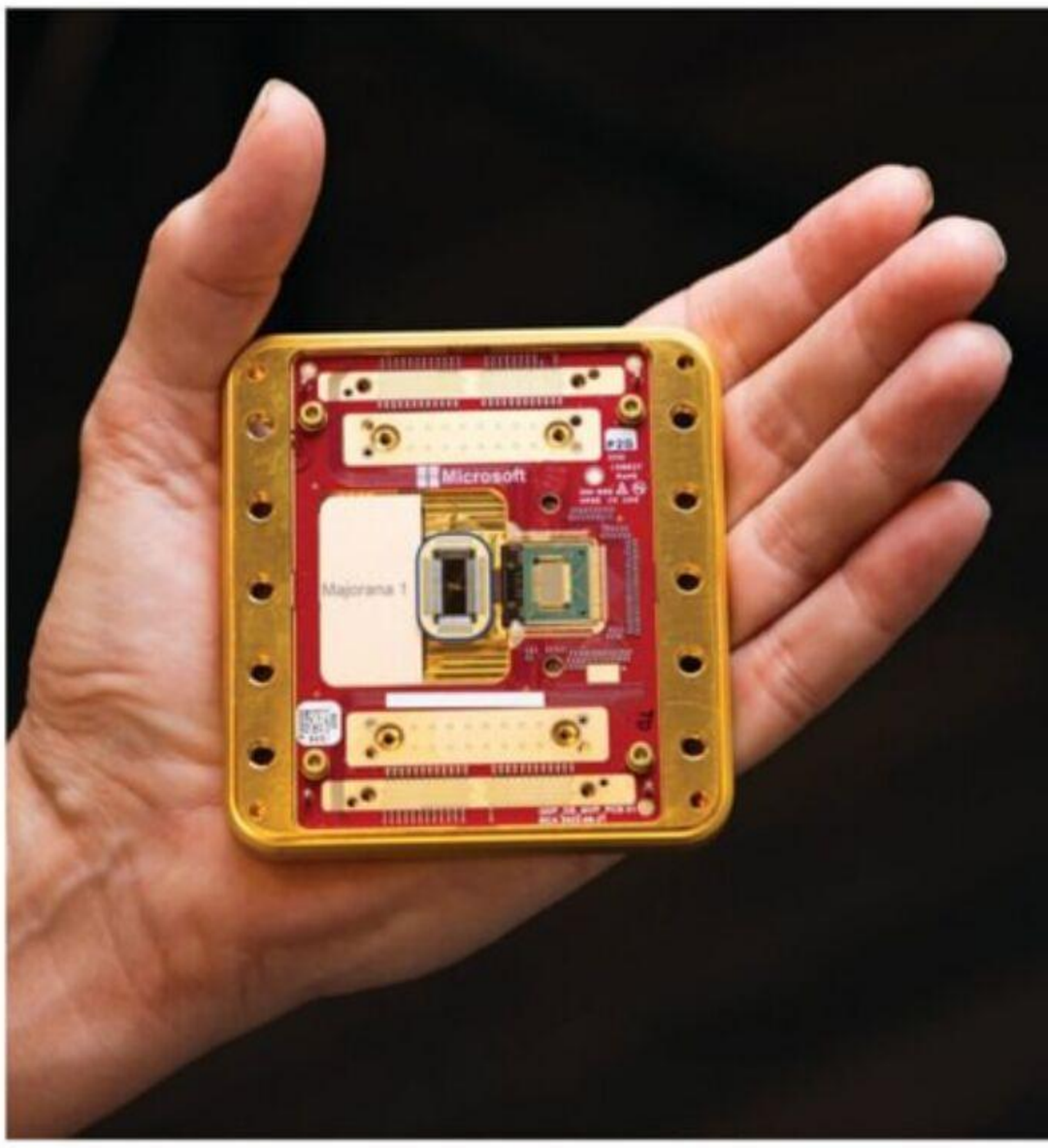
A diamond quantum microprocessor

Most modern quantum computers need to be cooled and vacuum-sealed to protect qubits with special properties. At Oak Ridge National Lab (ORNL) in Tennessee, Quantum Brilliance recently integrated the facility’s first onsite, commercial quantum-classical hybrid cluster that uses naturally occurring defects in diamonds as qubits, says CEO Marcus Doherty. The diamonds are hardier than traditional qubits, and can operate at room temperature, saving energy and space. The quantum microprocessor, which is about the size of a desktop computer and could help simulate chemistry between molecules, preserved quantum states for over a millisecond in tests. **—Charlotte Hu**

QUANTUM CHIP ADVANCEMENTS

A quantum leap

While the age of quantum computers is not yet upon us, a flurry of breakthroughs in the last year has brought it closer. In December, Google unveiled its Willow quantum chip, quickly followed by Microsoft’s Majorana 1, and Amazon’s Ocelot. IBM is set to debut its new Nighthawk processor before the end of the year. Each has demonstrated the ability to make the experimental systems and their famously finicky, ultrasensitive quantum units more stable and reliable. The approaches vary, but the simultaneous breakthroughs mark a Cambrian-esque explosion in the field, says Marin Ivezic, founder of Applied Quantum, a consulting firm. “The race is now about who can scale it fastest,” Ivezic says.
—Marina Koren



EXPERIMENTAL

COGNIXION AXON-R

Voice for the voiceless

This noninvasive headset gives voice to people who have lost theirs to traumatic brain injury, stroke, ALS, or other neurological conditions. Axon-R measures eye, head, and brain activity to let individuals select letters, words, or commands, and also builds a personalized assistive AI model that suggests response words and phrases to users. The headset's speaker generates speech in their voice. "It gives them their life back," says founder and CEO Andreas Forsland. In March, Cognixion announced a clinical trial with late-stage ALS patients. Axon-R, which leading brain-computer interface company Blackrock Neurotech began distributing this year, is now being used by over a dozen major health systems. **—Jared Lindzon**

CARBIOS ENZYMES

Recycling textile waste

For Carbios, a French biotech firm, one man's trash is another man's classic white T-shirt. Working with clothing manufacturers like Patagonia, Puma, and Salomon, the company developed recycling technology that uses enzymes to break down polyester fibers in textile waste; the enzymes act like microscopic scissors on the polyester, leaving behind raw material that can be reconstituted, spun into yarn, and woven into fabric for new garments. The company's first commercial plant, scheduled to open in France in 2026, will process tens of thousands of tons of waste per year to manufacture fresh plastic packaging and textiles—including about 400 million T-shirts. **—Marina Koren**

FASHION

STELLA MCCARTNEY S-WAVE SPORT SNEAKER

A plant-based sneaker with a compostable sole

An estimated 22 billion shoes are sent to landfill every year—but Stella McCartney's new S-Wave Sport Sneaker is one step toward a more responsible future. "Every part of it incorporates conscious materials," McCartney says. Each shoe is vegan and features a pineapple leaf yarn-knit upper, but its biggest breakthrough lies in its sole, which is crafted from BioCir Flex, a non-toxic material made by Balena. Engineered from biodegradable polymers and plant-based components, it's as durable as polyurethane and as flexible as rubber, but "can be recycled or composted—leaving no waste or negative impact on Mother Earth," McCartney says. **—Jenna Igneri**

LYCRA FIBER MADE WITH QIRA

More sustainable spandex

In July, textile manufacturer Qore opened the doors to its $300 million facility in Eddyville, Iowa, to produce Qira: a bio-based, 1,4-Butanediol (BDO) that replaces building block molecules historically produced using fossil fuels with those derived from U.S.-grown field corn. The Lycra Company is among Qore's first collaborators, incorporating Qira into a renewable, bio-derived Lycra fiber for use in clothing and other textiles. Lycra's use of Qira has the potential to reduce Lycra's carbon footprint by up to 44%, according to a cradle-to-gate screening commissioned by the company, while delivering the same level of performance as Lycra's original spandex fibers. **—Nina Derwin**

UNCAGED INNOVATIONS ELEVATE

A more authentic leather alternative

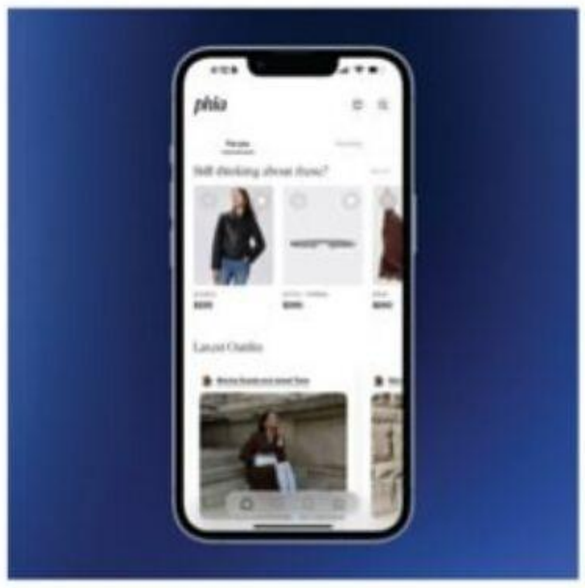
Uncaged Innovations is reinventing plant-based leather alternatives by starting with the very foundation of animal leather: collagen. "We asked, 'What makes leather leather?'" says co-founder Stephanie Downs. The result is Elevate, a material made with plant proteins from grains like wheat, soy, rice, and other agricultural byproducts that mimic collagen's fibril structure; it looks, feels, and performs like traditional leather while "emitting 95% fewer greenhouse gases, using 89% less water, and 71% less energy" to make, according to the company. Car makers Jaguar Land Rover and Hyundai are exploring using Elevate in their interiors. **—Jenna Igneri**

THIRDLOVE TEMPSYNC T-SHIRT BRA

A temperature-regulating bra

"Women's bodies go through many different changes—perimenopause, menopause, postpartum—and yet the lingerie industry hasn't kept up," says Ra'el Cohen, co-founder and Chief Creative Officer of ThirdLove. Over 80% of women experience hot flashes during menopause. ThirdLove had this in mind when it became the first intimate apparel to incorporate 37.5 Technology—a cooling fabric used in performance gear—in its TempSync T-Shirt Bra. The textile uses embedded volcanic minerals and activated carbon particles to pull moisture vapor from the skin and speed its evaporation—all before you break a sweat. **—Nina Derwin**

FASHION



PHIA

A smart fashion friend

Online shopping is overwhelming, and it's tricky to weigh the pros and cons of prices, quality, and environmental impact. Enter Phia: a free, AI-powered shopping assistant co-founded by Phoebe Gates (Bill and Melinda's daughter) and Sophia Kianni. Phia's user-friendly interface, available on iOS and as a Google Chrome browser extension, compares prices for new and used clothing, shoes, and accessories with one click. It also provides insight into how certain brands hold value in the resale market to help shoppers discern when to buy secondhand. Since its launch in April, Phia has garnered over 500,000 users and 5,000 direct brand partners. **—Nina Derwin**

TAGWALK TRENDS DASHBOARD

Fashion forecasting

Nearly 9,000 looks debuted on the Spring/Summer 2025 fashion runways—a staggering figure to analyze in search of emerging trends. Paris-based fashion search engine Tagwalk simplified the task with its AI-powered Trends Dashboard, described by CEO Alexandra Van Houtte as "an unbiased platform that delivers actionable data." Launched in December 2024, it analyzes tags on more than 400,000 images across 1,000 brands, plus an archive of 100,000 industry searches, to forecast trends up to a year in advance. The end result? Sharper predictions, and the potential to minimize overproduction. **—Nina Derwin**

CITIZENS OF HUMANITY AND PILI ECO-INDIGO

Earth-friendly denim

The world loves denim; each year, around 80,000 tons of indigo dyes are produced with the use of non-renewable petrochemicals and toxic compounds. LA-based apparel maker Citizens of Humanity and French biochemical company Pili have teamed up to change that with Eco-Indigo, a synthetic dye made by genetically engineering, fermenting, and filtering bacteria to produce indigo pigments. The use of fewer chemicals translates to safer conditions for workers, and will reduce CO_2 emissions by more than 50%, according to Pili founder Jeremie Blache. Citizens of Humanity launched the first Eco-Indigo denim garments in January. **—Nina Derwin**

KARA POD

Coffee from thin air

No need to refill this coffeemaker's water reservoir every day to support the daily habit: The machine can pull 1 gallon of water a day out of thin air. Kara Water spent two years miniaturizing its patented air-to-water technology to develop the countertop product, which dispenses mineralized water and can use either Kara's own biodegradable coffee pods or Nespresso-compatible pods to make coffee. It's not cheap, but even with operating costs factored in, CEO and founder Cody Soodeen says Kara Pod still offers savings to customers who normally buy bottled water or coffee from a shop. **—Jeremy Gantz**

SHINKEI POSEIDON

A more humane approach to commercial fishing

Most fish that we eat die slowly as they flop around on a boat deck, releasing stress hormones and lactic acid that can degrade quality and shelf life. Shinkei Systems invented Poseidon, an AI-powered robot that makes fish deaths more humane by automating a centuries-old Japanese slaughtering technique known as "ike-jime." Poseidon scans fish using computer vision to determine their species, and then kills them instantly. Seven commercial fishing boats are now using the robot; Shinkei Systems then buys and sells the high-quality fish under its brand, Seremoni, to upscale restaurants and grocers including Daniel in New York and Benu in San Francisco. **—Catherine Boudreau**

CANN

An alcohol-free buzz

Only 54% of Americans reported drinking alcohol in 2025—the smallest share in almost a century. Cann is capitalizing with an alternative social beverage. An 8 oz. serving of its microdose cannabis drinkable contains 2 mg of THC and 4 mg of CBD, capturing the "buzz people love with alcohol" without "the problematic stuff," like high calories and hangovers, says CEO and co-founder Jake Bullock. With inventive flavors like grapefruit rosemary, it sold nearly 10 million cans in 2024. This year, the brand launched an Aperol Spritz-inspired bottle to share and a "naked roadie"—a flavorless liquid packet that can be mixed with other drinks. **—Charlotte Hu**

WILDTYPE SALMON SAKU

The first lab-grown seafood

In May, Wildtype's cultivated salmon became the first cell-grown seafood to receive approval from the U.S. Food and Drug Administration. (Lab-grown chicken was approved in 2023.) It was a long-awaited milestone for co-founders Justin Kolbeck and Aryé Elfenbein, who believe that cultivated proteins will help improve food security and lessen the environmental ramifications of commercial fishing. By year's end, Wildtype's sushi-grade salmon saku will be served in restaurants in San Francisco, Seattle, Aspen, and beyond. Meanwhile, the company in September joined cell-cultivated chicken maker Upside Foods in a lawsuit against Texas to fight a new law banning the sale of cultivated foods in the state. **—Derek Rose**

FOOD & DRINK

NINJA SWIRL BY CREAMI

Soft-serve, hard-serve, any-serve ice cream

The Swirl adds a delicious twist to Ninja's Creami range of at-home ice cream makers: It can whip up soft serve, along with the customizable hard ice cream that made the original a bona-fide viral hit back in 2021. "I think the way we create ice cream is truly unique," says Kaitlyn Hebert, Ninja's CMO of global marketing. "It took a lot of trial and error to get that beautiful swirl you imagine as a child." With the Swirl's 13 one-touch programs—including gelato, frozen custard, milkshake, fruit whip, and a new Creamifit option (designed for low-sugar, high-protein recipes)—the possibilities are endless.

—Derek Rose

BETTER MEAT CO. RHIZA

An innovative alt-protein

"I wish people would be happy eating lentil soup and hummus wraps," says Better Meat Co. CEO Paul Shapiro. "But people want meat." His company makes Rhiza, a complete protein produced by feeding sorghum and potato sidestreams from French fry factories to Neurospora crassa microbes. It ferments in mere hours—less than 2.5% of the time it takes to produce chicken—and gains a meat-like texture. Brands like Hormel have blended Rhiza with animal meat to boost its low-fat protein content, and Better Meat Co. plans to sell Rhiza as a standalone alt-protein—priced lower than U.S. commodity ground beef—next year.

—Alison Van Houten

SAVOR BUTTER

Lab-grown fats

Savor is making animal-free fats that chemically match the real stuff, but have lower CO_2 emissions, water use, and land use than their agriculture-based counterparts. Starting with water and either carbon dioxide or methane, the food-tech firm uses a thermal process to build fatty acid molecules, which can then form fats like milkfat and butter. In March it launched, adding a little rosemary and thyme extract for grassy undernotes. It behaves, and tastes, just like regular butter. Savor has been used in Michelin-starred restaurants like SingleThread and Atelier Crenn, and even made a collection of chocolate bonbons, on sale in December. **—Charlotte Hu**

AEROPRESS PREMIUM

Simple and stylish coffee

"The glass chamber was the number one feat," Matt Brown, director of new products at AeroPress, says about designing the AeroPress Premium, a $200 metal-and-glass version of the company's beloved namesake plastic coffee maker. Resembling an oversized syringe, the AeroPress consists of a chamber, filter cap, and plunger. For the Premium, Brown says it took over a year for the company to find a glass manufacturer to create "a double wall chamber that's actually sealed on two ends." CEO Gerard Meyer says that also meant AeroPress had to "invent tests which didn't even exist" to check if it could combine boiling water, ground coffee, glass, and metal in an end-product that was both comfortable and safe to use.
—Craig Wilson

POSHA

Robotic home chef

AI is finally doing a job many people want it to take: cooking dinner. Posha is about the size of a microwave (and fits under standard kitchen cabinets), with a burner, stirring attachments, ingredient containers, and a touchscreen to control it all. Pick a recipe from the frequently updated digital library and follow Posha's ingredient prep instructions. Then walk away—Posha adds ingredients and cooks, using AI cameras to adjust (like adding water if too dry) just as a human would. It can only do one-pot dishes for now, but the recipe range is impressive. The tikka masala was delicious.
—Emma Barker Bonomo

AERFLO SYSTEM

Waste-free sparkling water

"Aluminum cans are only around 50% recyclable in the United States," says Aerflo co-founder Buzz Wiggins. "The rest goes to waste." His company's solution—a water bottle with a svelte carbonation unit built right into the lid—aims to reshape the $40 billion sparkling water industry. Leading up to its launch in 2024, the company miniaturized its design and worked with the U.S. Department of Transportation to become the first federally permitted business to ship CO_2 through the USPS. Aerflo's mail-in refill program then cycles its carbon capsules back to its New Jersey facilities for reuse, eliminating more than a million single-use containers in a year. **—Alison Van Houten**

FOOD & DRINK

BUBS

Foamy vegan gummies

The distinctive Bubs candies, which come in a variety of shapes and flavors, are a 1990s invention of the Swedish Lindström family. The vegan, gluten-free gummies have a unique foamy texture created with a proprietary recipe and manufacturing technique. After the candies went viral on social media in 2024, causing a surprise supply shortage, Bubs owner Orkla Snacks is launching four new bagged candies for the U.S. market: sour tutti frutti diamonds, sour lemon raspberry skulls, sour strawberry vanilla diamonds, sweet banana toffee ovals. **—Charlotte Hu**

TROPIC NON-BROWNING BANANA

Longer-lasting bananas

The world's most popular fruit grows less so when it gets brown and mushy. To extend shelf life and reduce food waste, scientists at U.K.-based biotech company Tropic introduced the first non-browning banana this year. The banana, made using precision gene editing techniques, stays fresh at least 12 hours after peeling and doesn't brown as easily. CEO Gilad Gershon says they're also working on bananas that stay greener longer and are resistant to a fungal disease wreaking havoc across plantations from Asia to Latin America.
—Catherine Boudreau

GREEN ENERGY

BLOOM ENERGY SERVER

Providing reliable power

The growth of AI and data centers creates enormous loads on energy grids, sometimes causing unpredictable outages. Bloom Energy has developed onsite power systems to provide 24/7 reliability. Their fuel cells convert natural gas, bio-gas, or hydrogen into electricity, without combustion, resulting in no or limited CO_2 emissions. Rather than precious metals often used in fuel cells, Bloom Energy Server uses ceramic material. It offers generators ranging from 200 kilowatts to hundreds of megawatts, and the systems can be grouped. Customers include Home Depot, Honda, and FedEx, and it announced a 1 gigawatt partnership with the utility provider American Electric Power in November 2024. **—Micheline Maynard**

FORTESCUE GREEN PIONEER

A seaworthy solution to pollution

Fortescue is exploring how to best retrofit the rest of its fleet with ammonia-only engines, in order to reduce emissions from the shipping of its iron ore by 50 percent over 2021 levels by 2030. Fortescue, an Australian mining company that transports iron ore, is tackling the problem with ammonia, a promising alternative to traditional marine fuels. "It doesn't produce carbon dioxide when you burn it," says Andrew Hoare, the company's head of marine systems and green shipping. Fortescue's Green Pioneer, a first-of-its-kind vessel powered by ammonia and diesel, set sail on a global tour this year, demonstrating safe refueling with the corrosive chemical, which requires special handling. Fortescue is exploring how to best retrofit the rest of its fleet with ammonia-only engines, in order to reduce emissions from the shipping of its iron ore by 50 per cent over 2021 levels by 2030.
—Marina Koren

BLUETTI APEX 300

Power up

This 80-pound portable power station is ready for campsites, RV and van-life nomads, and home blackouts. It's the first to offer 12,000-watt bypass capability, enough to simultaneously run heavy appliances (like a dryer) and even charge an electric car. A voltage switch toggles between 120V and 240V, and ports allow direct hookup to RVs. As camping and RVs become more popular, and extreme weather more widespread, "people's need for energy is getting more and more complex," Bluetti's Ellen Lee says. The Apex 300 can be recharged via gas generator or solar panels during extended outages. **—Natasha Frost**

ECOFLOW OCEAN PRO HOME BATTERY STORAGE

Stand-out home energy backup

With storms and stress knocking out electrical grids, homeowners have turned to solar panels and whole house generators to ensure power. EcoFlow Ocean Pro's home battery storage system, launched in the U.S. in July, goes further. Its AI-powered energy storage works with solar panels, the energy grid, and generators to provide seamless energy—up to 24 kilowatts of continuous power for the whole house. The system's other specs beat competitors too: It touts 10 kilowatt hours of storage (which can be expanded to 80), it works in temperatures from -4°F to 140°F, each cell has an automatic extinguisher that activates in the event of fire, and it can withstand up to 3.3 ft. of water in a flood. **—Micheline Maynard**

GREEN ENERGY

HEIMDALL POWER NEURON

Grid efficiency

Virtually none of the world's high voltage powerlines have sensors—they operate based on conservative estimates about safe capacity and run below their true peak capability. So Heimdall Power developed the Neuron, its "magic ball." The round device attaches to power lines to measure conditions affecting capacity (temperature is key) and calculate how much current the line can actually carry, making for more efficient use and improving the safety and reliability of power transmission. It's already in use in Europe, and an August analysis of the first year of Heimdall's first big U.S. project in Minnesota found Neurons increased transmission capacity 63% at peak demand and would save an estimated $3 million.
—Micheline Maynard

POLAR NIGHT ENERGY SAND BATTERY

Grains of energy

At Polar Night Energy, co-founders Tommi Eronen and Markku Ylönen use sand to store wind and solar energy as heat, providing a cleaner alternative for warming homes and businesses. The company's first industrial-scale sand battery went into operation this summer, contributing energy for the 5,000 residents of Pornainen, Finland, and using crushed soapstone left over from a fireplace manufacturer. Polar Night Energy has started testing samples shipped from interested customers around the world, analyzing grains for their heat-storing capacity. "We can use all kinds of different sand-like materials," Eronen says. **—Marina Koren**

ECO WAVE POWER GRID CONNECTED ENERGY ARRAY

Harnessing ocean power

The energy in breaking waves is being put to new use generating electric power. In September, Eco Wave Power launched the first U.S. wave energy project at the Port of Los Angeles. It attaches floaters to existing marine structures, such as buoys and docks. The up and down motion of the waves sends pressurized fluid to a conversion unit on land that generates electricity. The demonstration project can generate around 100 kilowatts of power (which could power a few dozen homes) and will run for two years to collect data. Eco Wave Power is already working on other projects in Portugal and Taiwan.
—Micheline Maynard

WÄRTSILÄ ENERGY STORAGE SYSTEM

Giant grid-scale battery

In 2024, the U.K. phased out its last coal-fueled power plant. Now, power operators are looking for sustainable alternatives for storing power. In March, a 200-megawatt, 400-megawatt hour energy storage system built by Wärtsilä Energy went live in Blackhillock, Scotland. The site, owned and operated by grid battery storage specialist Zenobe, is meant to balance power supply and demand, enhance the reliability of the U.K.'s renewable power system, and save money. The location can integrate wind power from nearby offshore wind farms, letting it ease grid congestion. According to Zenobe, it should save users approximately $220 million over the next 15 years. **—Micheline Maynard**

JETSON AIR

A less costly heat pump

Heat pumps are an efficient, electric alternative to conventional furnaces and air conditioning, 80% of which in the U.S. run on fossil fuels. But a major obstacle to wider adoption is their installation cost, which runs thousands of dollars more than traditional HVAC systems. To cut the upfront expense, Jetson uses tech to assess projects remotely so they're only on-site for installation day. And it's turning to vertical integration to cut costs further, launching its own device, Jetson Air, in September. A 24/7 monitoring system alerts technicians of any potential defects while sensors track air quality and remind owners to replace their filters. **—Micheline Maynard**

KAYRROS WILDFIRE RISK MONITOR

Data for wildfire prevention

Traditional maps show where a wildfire has begun. Kayrros' risk modeling tools predict fires even before they start, and monitor threatening situations multiple times a day. Its Wildfire Risk Monitor uses satellite technology, data fusion, machine learning, and AI along with ground-level data to assess risks, and allow users to take preventative actions such as clearing vegetation, monitor real-time conditions, and quantify post-fire destruction. It now works with insurers—including AXA, one of the world's largest insurance companies—emergency services, governments, infrastructure operators, and more. **—Micheline Maynard**

GENESIS SYSTEMS WATERCUBE

Slaking thirst

When Hurricane Milton knocked out water service to a children's hospital in St. Petersburg, Fla., last year, a WaterCube stood ready with a backup supply, preventing the need to evacuate the NICU. The transportable WC-1000 machine, which can run on conventional or solar power, pulls moisture from the air to produce around 1,000 gallons of potable water per day. This year Genesis Systems introduced WC-10, a smaller WaterCube that can mount to a vehicle and run off its alternator. The U.S. military, a top backer of Florida-based Genesis Systems, is testing military-grade WaterCubes in the field. **—Catherine Boudreau**

CORAL VITA BRAINCORAL

Fostering reefs

Coral reefs exist in more than 100 countries, supporting 25% of marine life and benefitting an estimated 1 billion people. But half of the world's coral reefs have died since 1950, and the rest could be gone by 2050. Coral Vita helps regenerate coral reefs on land, using technology that it says makes the process significantly faster traditional methods. The digital BrainCoral platform tracks everything about coral's growth to ensure it has the best start, even identifying more heat-tolerant genetics. BrainCoral has helped produce more than 100,000 corals, and has been licensed to restoration projects around the world, including King Abdullah University of Science and Technology in Saudi Arabia, which aims to produce more than 400,000 corals per year by 2027. **—Micheline Maynard**

VOLTPOST

Expanding EV charging access

EVs have grown to about 10% of the U.S. car market, but finding places to charge can still be a headache. Voltpost—available in six states, in partnership with utility companies and AT&T—is making it faster and cheaper to add new charging points by retrofitting existing infrastructure: It encases conventional lampposts with EV charging equipment. "We realized we had this infrastructure right in front of us," says founder and CEO Jeffrey Prosserman. Drivers use an app to unlock the cable and plug to charge their vehicle. A sleeker second generation version, launched in September, can attach to wooden utility poles and lamps in historic districts. **—Micheline Maynard**

FRONTLINE WILDFIRE DEFENSE SYSTEM 2

Protecting homes from wildfires

In early 2025, wildfires destroyed more than 12,000 properties in Los Angeles County—but only two of the 61 homes protected by Frontline Wildfire Defense's fire safety system were lost. The system installs spray nozzles on roofs and other key areas around the property; when Frontline's app detects a nearby fire, they release water for 20 minutes per hour that's then supplemented with Class A firefighting foam, creating a perimeter of protection around the house. The service is now available in 12 Western U.S. states and has been installed on roughly 2,000 homes. "People are realizing they have to take matters into their own hands," says CEO Harry Statter. **—Micheline Maynard**

NEXALUS LIQUID COOLING

Turning data centers into power plants

Data center operators face a perennial problem of keeping cool, putting significant stress on the electrical grid. As demand for data centers skyrockets, Nexalus Liquid Cooling's solution is to seal the servers off and create a closed-loop system, which co-founder Kenneth O'Mahony says can reduce energy use by 20%, and footprints by 33% (since servers can be more tightly packed). It then uses liquid to cool GPUs, captures the resulting thermal energy, and puts it to use powering surrounding communities. The system is being implemented by Dell, Hewlett Packard Enterprise, and even Formula One racing. **—Micheline Maynard**

KRAKEN RESIDENTIAL FLEX

Lowering electricity bills

The rise of consumer renewable energy and electric cars has put new strain on power grids. Kraken—which spun off from parent company Octopus Energy in September—partners with utilities to predict when customers will charge their electric devices and shifts demand to off-peak times when electricity is cheaper. The result: lower bills for consumers and more grid flexibility for energy providers. "If you give people what they want," says Devrim Celal, Kraken's chief flexibility and marketing officer, "they're happy." The platform is available in seven countries, including the U.S. and the U.K., with plans to launch in Japan and Australia. **—Nikita Ostrovsky**

HEAT IT

Chemical-free mosquito bite treatment

When engineering student and self-described "mosquito magnet" Lukas Liedtke learned that putting a hot teaspoon on a bug bite could stop the itch, he decided to harness "hyperthermic" treatment in a device. Heat It fits on a keychain, and plugs into a smartphone on one end. Users apply the other end to the bite, and can control treatment temperature and duration—with options based on a peer-reviewed study of more than 12,000 insect bites—through the app. Heat It recently launched at U.S. REI stores and, per Liedtke, has sold around 1.6 million devices. **—Jessica Klein**

JANUARY AI

A virtual continuous glucose monitor

When a user searches a menu, scans a barcode, or takes a photo of their meal, the January AI app uses an algorithm to predict how much the food will spike their blood sugar, and suggests timely behavior changes like exercise or increasing time between meals to control glucose levels without a continuous glucose monitor (CGM) or any needle pricks. The algorithm builds on clinical trial data from thousands of users' fitness trackers, CGMs, and food logs. "We wanted to come up with an easy and affordable way for everyone to have access to their blood sugar," says CEO Noosheen Hashemi. **—Charlotte Hu**

Disclosure: TIME owner and co-chair Marc Benioff is an investor in January AI.

EGAL PADS ON A ROLL

Ultra-accessible menstrual pads

Tom Devlin created Pads on a Roll after his wife, who reported on women's issues for the Boston Globe's Spotlight team, noticed a trend: Girls were missing school because they lacked access to menstrual care products. By designing pads to resemble a toilet paper roll, Devlin aimed to normalize their presence for students and facilities managers while eliminating the expense of bathroom vending machines, since they fit into standard dispensers. Launched in late 2023, the company now supplies more than 1,700 schools, libraries, and healthcare facilities, plus airports like Denver International and stadiums like Allianz in Twickenham, England. **—Charlotte Hu**

WISP MALE BV PARTNER TREATMENT

A better cure for bacterial vaginosis

In March, a landmark study in the *New England Journal of Medicine* demonstrated that, although bacterial vaginosis (BV) only affects women, sexual contact plays a key role in transmission, so treating male partners prevents recurrence in women. Within a month, women's telehealth company Wisp launched the first prescription antimicrobial treatment regimen for male partners. "It was really important for us to move on the news," says Wisp CEO Monica Cepak. "We still need to invest in education and awareness on this new treatment category." **—Charlotte Hu**

NUANCE AUDIO GLASSES

In-frame hearing help

Hearing loss is common as people age, but a large majority of people who could benefit from hearing aids don't wear them, often due to stigma. Nuance Audio Glasses offer a new way to hear better, with built-in speakers that amplify sound directionally while hiding discreetly in the stylish frames. Users can customize sound settings on a connected smartphone app and even use a tiny remote to control volume. In February, the $1,200 over-the-counter glasses were approved by the FDA as the first "software as medical device." Nuance Audio Glasses can accommodate prescription or non-prescription lenses. **—Jessica Klein**

KOHLER AND REMEDY PLACE ICE BATH

A luxury cold plunge

Ice bathing can improve circulation, decrease inflammation, and hasten muscle recovery. There are mental perks as well, says Huston Sprang, Kohler's senior wellness product manager. "The mindset of pushing your body to extreme cold," he says, facilitates "resiliency." Steady breathing is part of the process. At a temperature as cold as 39°F, Kohler's $20,500 Ice Bath (a collaboration with "social wellness club" Remedy Place) offers timed lights to keep respiration on track as users bask in a sleek, minimalist design that Sprang says multiple builders are "already designing rooms around" before the product's launch in November. **—Jessica Klein**

TEAL HEALTH WAND

At-home cervical cancer test

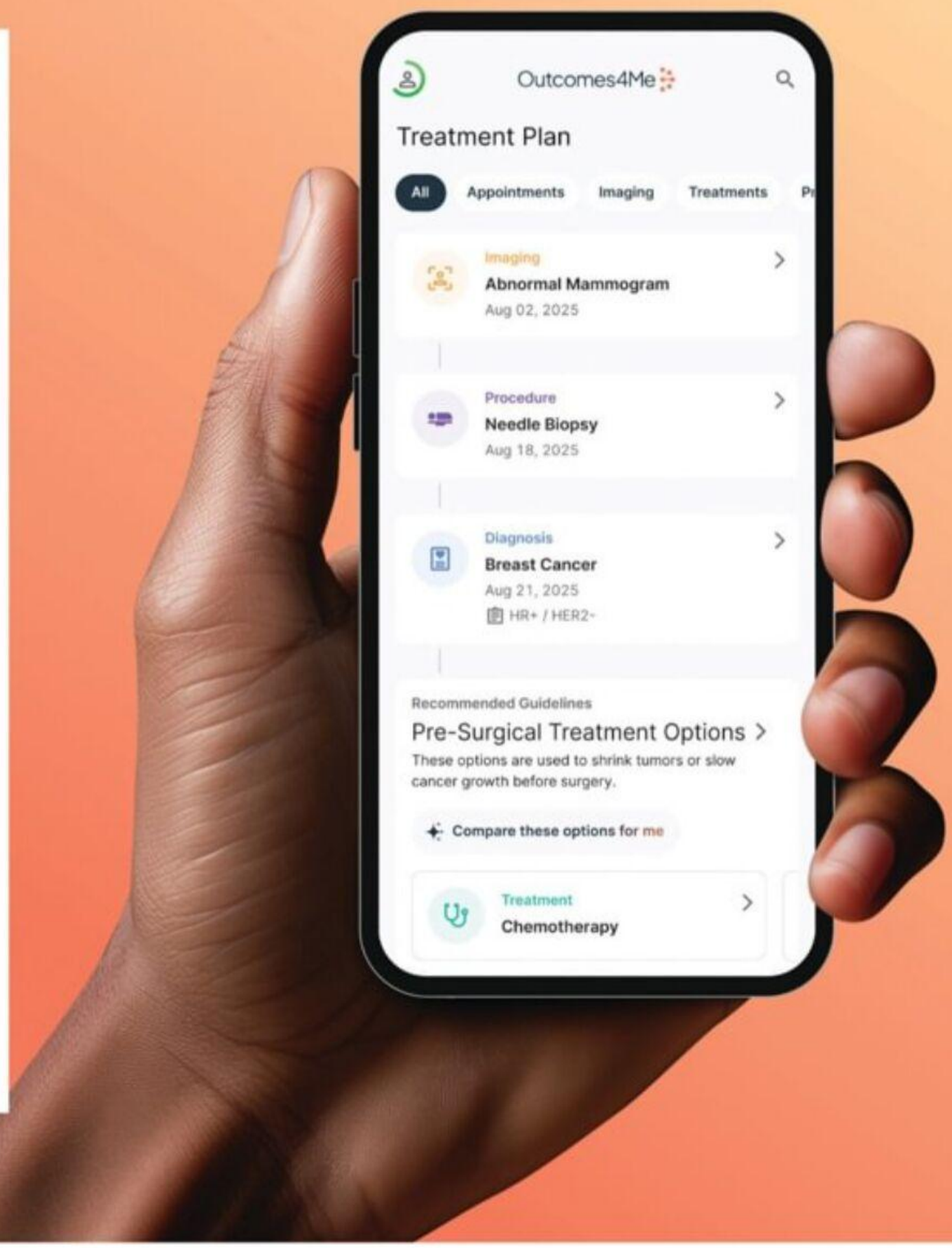
In May, the Teal Wand became the first at-home screening test for cervical cancer to be FDA-approved, and Teal Health began shipping kits across California in August. Users can place an order online, get a prescription from a telehealth clinician, and receive the wand—which looks and works like a tampon, with the cell-swabbing sponge inside—in the mail. They then submit the sample by mail for a Roche cobas test, which is FDA-approved to detect the HPV virus that causes cervical cancer. In a clinical trial, Teal found that the self collection method was as accurate as in-clinic collection. **—Charlotte Hu**

HEALTH & WELLNESS

OUTCOMES4ME

Demystifying cancer care

After experiencing a cancer scare, former Novartis executive Maya R. Said saw firsthand how nebulous the care-finding process can be—even for insiders. In 2017, she co-founded Outcomes4Me, a free, AI-based app that translates medical records and genomic data into plain-language care paths, clinical trial matches, and symptom tracking. It makes guidelines "accessible to any person that's not a scientist," says Said, so they "can really understand these treatments and advocate for themselves." More than 400,000 patients now use the platform, which was ranked the highest-quality cancer app in the peer-reviewed journal *Current Oncology*. This year, the company acquired Germany's Mika Health app to expand into Europe. **—Aimee Groth**



SLEEP NUMBER CLIMATECOOL

Saving hot sleepers

When considering comfortable sleep temperatures, people are "always thinking of their thermostat versus their bed," says Rajasi Mills, head of health at Sleep Number. The company's ClimateCool smart bed is premised on the idea that the bed's temperature is most essential to getting a good night's sleep. Rather than pushing cool air through the bed, its "dynamic airflow system" uses fans to draw heat away from the body through the mattress' breathable cover and cooling ceramic gel layers. It can cool up to 15 degrees overnight, and couples can customize temperatures on each bed side, along with firmness. **—Jessica Klein**

FILTERBABY BATH FILTER

A less wasteful filter

Chlorination is highly effective at disinfecting water supplies, but common chlorine levels found in U.S. and European water systems have been tied to elevated cancer risks. Many people use shower and tap filters, but Filterbaby's new bath faucet filter covers a relaxing soak as well, removing up to 99.5% of chlorine, as well as chloramine, heavy metals, and microplastics in tap water, according to the company. The product, which begins shipping in December, also aims to reduce waste: It uses one-fifth the amount of plastic found in competing products, the company says, in part through "ultra-thin" filter refill shells. **—Jessica Klein**

SOUNDHEALTH SONU

Drug-free sinus relief

Paramesh Gopi expected surgical treatment when he approached Dr. Peter Hwang with a months-long sinus infection. Instead, the entrepreneur ended up discussing a new decongestion method that Hwang and a colleague were developing. It would use targeted vibrations to constrict inflamed sinus tissue and move mucus, clearing stuffed passages. The experience inspired Gopi, now SoundHealth's CEO, to join them in creating the Sonu headband, which emits sound waves after the companion smartphone app scans a user's face to determine their sinuses' resonant frequencies. In June, Sonu became the first FDA-approved device for treating nasal congestion and allergies without drugs. **—Jessica Klein**

HERBRAIN

A breakthrough in pregnancy info

Pregnancy contains a lot of unknowns, and research is notoriously difficult. At UC Santa Barbara, assistant professor Nina Miolane is working with REAL AI and the AI Core of the Bowers Women's Brain Health Initiative to develop a tool designed to offer insight to expectant mothers: HerBrain, the first digital twin of the maternal brain. Built with machine learning and training on brain imaging data from pregnant people, the prototype illustrates how brain structures change across the pregnancy and postpartum periods, so a woman can predict her weekly shifts. "We want this to be an educational tool," Miolane says. The HerBrain app is set to launch by 2027, with the goal of eventually integrating it into other pregnancy apps. **—Gabriela Riccardi**

GOB is a material science company based in San Francisco, California. We exist to evolve your everyday into a regenerative future.
This package contains single-use mycelium earplugs. Designed for your loudest moments—and the peace that follows.
PROTECT YOUR HEARING
SINGLE-USE EARPLUGS
100% BIO-BASED
20dB PROTECTION
04 PAIRS
GOB

GOB EARPLUGS

Plastic-free hearing protection

An estimated 40 billion plastic earplugs are produced every year, and many are thrown out after one use. GOB's mission is to make "single use that doesn't suck" through sustainable and compostable materials, says CEO and co-founder Lauryn Menard. Their latest invention is a squishy cylindrical earplug made from lab-grown mycelium (mushroom root) that offers frequency protection from 12 to 25 dB and can be worn for sleep, air travel, or concerts. GOB's current partners include Bowery Presents and AEG Live, and the earplugs are for sale at venues like Under the K Bridge and Forest Hills Stadium. **—Charlotte Hu**

HEALTH & WELLNESS

OSTEOBOOST

Reduce bone loss with a belt

Osteoporosis weakens bones as we age, affecting 50 million Americans, and women disproportionately. Half of all women will fracture a bone in their lifetime, according to Laura Yecies, CEO of Osteoboost, and hip fractures in old age often lead to complications or death. Mechanical loading associated with stepping and jumping maintains bone strength, but those actions decrease with age. Osteoboost was inspired by technology used to provide that mechanical loading for astronauts to stay healthy in space. The FDA-cleared vibrating belt worn around the hips consistently reduced spinal bone loss in study participants by 85%. **—Chris Stokel-Walker**

KEEP COLD

A stylish medication manager

Many high-cost specialty medications are kept at precise temperatures from factory to pharmacy—and then they're tossed into patients' fridges, where temperature fluctuations can risk spoilage. Keep Labs' Keep Cold aims to offer clinical-grade storage at home. Combining active temperature regulation, predictive alerts, and real-time mobile monitoring in a sleek whisper-quiet package, the alarm-clock sized device tracks schedules, displays reminders, and even measures changes in the weight—alerting users and caregivers if a dose is missed. "The thesis was that we had to make this so easy for patients," Keep Labs CEO Jeff Wandzura says. "It has to be turnkey." **—Jared Lindzon**

WHOOP MG

Pro-level health data

If you've ever wondered which fitness tracker your favorite athlete wears, the answer might be the Whoop MG, which stands for "medical grade." Released in May, the wearable is unique in offering clinically-accurate ECG readings that detail cardiovascular health and "Daily Blood Pressure Insights" (in beta) that slight on a user's sleep quality and stress levels—all without a distracting screen on your wrist. Building on over 10 years of work with elite athletes—Cristiano Ronaldo, Patrick Mahomes, Rory McIlroy, and other pros are all investors—the device now offers a "pace of aging" score expressing how a user's recent habits impact long-term health. **—Matt Alderton**

SCIENCE LAB 3 MEMORY AIR

Scents to boost cognition

"If you took a deep breath now, you probably wouldn't smell anything," says Michael Leon, a neurobiology professor and developer of Memory Air. Leon calls our current environment an "odor desert," and claims it's hurting our brains. Leon and colleagues have published studies showing older adults' brain activity and memory improved significantly when exposed to different odors at night—a result of the "direct superhighway" from our olfactory systems to our brains' memory centers, he says. Memory Air, which cycles through 40 different scents nightly, like orange and eucalyptus, even showed improvements in dementia patients. **—Jessica Klein**

HOUSEHOLD

MIDEA PORTASPLIT

A portable air conditioner for a warming Europe

Notorious for eschewing air conditioners, Europe is getting hotter at a rate faster than the global average. "People are really suffering," says Manuel Seethaler, a public relations head at Midea, which debuted the portable air conditioner/heat pump PortaSplit last year in Germany. A cheap and quiet alternative to noisy ACs that typically cost thousands in the country to install, the PortaSplit offers tool-free self-installation and fits flexibly into historical windows. The PortaSplit began selling in France, Italy, Denmark, and the Netherlands this year—making ACs no longer a "crazy concept" across the Atlantic, Seethaler says. **—Jessica Klein**

TINECO CARPET ONE CRUISER

Deep cleaning made easy

Most carpet cleaners are heavy and often involve lengthy drying times. Launched last fall, Tineco's Carpet One Cruiser solves these pain points in a sleek, smart package. "It functions much like a standard vacuum in terms of convenience, while still delivering deep cleaning," says Bill Song, the company's international marketing and brand director. Built-in motion-detecting sensors ensure effortless handling, while the brand's proprietary iLoop sensor analyzes dirt or dust levels and automatically adjusts suction power and water flow. Post-wash, a heating component quickly dries the fabric, reducing the risk of bacterial growth and letting users reclaim their space in just 30 minutes. **—Derek Rose**

HOUSEHOLD

DREAME X50 ULTRA

Step-climbing robot vacuum

Robot vacuums have not reached full sentience yet, but the Dreame X50 Ultra gets closer. No need to redirect a sad appliance that's found itself stuck in a corner. This dirt-sucking device, released in February, uses smart navigation (it can recognize up to 200 objects) and responds to voice commands. It can also mop and clean steps and get over obstacles like cords, thanks to its new ProLeap system's retractable legs that climb up to two-and-a-half inches. In other words, the X50 Ultra is made for actual homes, with room thresholds and clutter. Dreame says it's their best-selling robot vacuum to date. —**Leslie Horn Peterson**

DREO TURBOPOLY FAN 707S

A fan that follows you

Keeping cool is tricky. Fans are one weapon, but their dutiful oscillations don't always hit the spot. Dreo's TurboPoly Fan 707S, which can be adjusted to stand from 39 to 44 inches high, has a millimeter-wave radar sensor built in that tracks where people are in a room, and "adjusts its airflow towards the individual," says Joshua Gunn, vice president of Dreo. "[It's] our next evolution of what fans could be." The standing fan can blow air 110 ft. and fill a standard room in less than a minute at a noise level below 25dB. —**Chris Stokel-Walker**

VASA WATERWHEEL PET FOUNTAIN

Cleaner water for your pets

There are oodles of pet fountains on the market. Vasa founder Darren Scott looked at what was wrong with them—scouring one-star Amazon reviews—to figure out how to make one that was actually good. Most importantly, he was aiming for cleanliness. "Just hearing the words of cat owners… gave me the realization that there was a problem," Scott says. Drawing on his years of experience as a process engineer in pharmaceutical marketing, Scott developed a pet water fountain that uses a (dishwasher safe) wheel instead of a pump to keep fresh water circulating so it never gets stagnant. —**Leslie Horn Peterson**

CULLIGAN ZEROWATER

Verifiable water filtration

Most water filters promise clean water but offer no proof they work. Culligan's ZeroWater filter pitcher features an integrated meter revealing contaminant levels in real time. The product removes 99.9% of total dissolved solids, 99.7% of lead and more than 99% of PFAS "forever chemicals"—significantly more contaminants overall than leading competitors, according to the company. "It's the same concept as sunscreen," says Kathy Chi Turber, president of Culligan's global products division: A barrier filters out what you don't want, while letting through what you need. And you'll always know when it's time to change the filter. **—Natasha Frost**

BEKO SOLAR OFF-GRID PERFORMANCE REFRIGERATOR

Keeping food fresh during blackouts

Beko last year rolled out its first solar-powered refrigerator in South Africa, which has been beset by rolling blackouts for years due in part to an aging power grid. The country has both the pressing need and the sunshine for solar refrigeration, says Alper Göynüşen, technical leader of R&D for power electronics at Beko. The first refrigerators cost R10,000 (around $500) and were distributed in partnership with local governments and the United Nations, but Beko plans to sell a model directly to consumers next year. When the power goes out, Göynüşen says, "you postpone to wash your clothes…but you need to keep your food fresh." **—Craig Wilson**

DYSON PENCILVAC

A cleaner's delight

Dyson's slick PencilVac is the slimmest cordless vacuum on the market (in Europe and Asia for now, coming to the U.S. in 2026), housing its motor and canister inside its handle. To compress the layout, Dyson designed a version of the smaller, faster motor used in its popular hair tools. The PencilVac's head pivots 360 degrees, contains four spinning "fluffy cones" that ball up hair and prevent tangles, and emits green LED light that highlights targeted dust specks. With lower suction than the brand's larger vacuums and weighing less than four pounds, the PencilVac is best for small spaces and touch-ups—and for that, it's a marvel of engineering. **—Emma Barker Bonomo**

HOUSEHOLD

LEAFYPOD SMART PLANTER

Plant nanny

With LeafyPod, the only green thumb you need is for tapping on your phone. The sleek smart planter has four AI sensors that monitor temperature, humidity, light levels, and soil moisture—all accessed via its companion app. But what truly sets it apart is its adaptive self-watering system: Over time, a LeafyPod automatically adjusts how much water it dispenses based on a plant's response to its environment. Humans have long talked to their plants; LeafyPod co-founder Cleo Song says now, plants can finally chat back. "We're giving them a voice to say if they're happy or not," she says. **—Derek Rose**

REMARKABLE PAPER PRO

A distraction-free tablet

Modern notetakers have to dodge distracting apps and alerts on their tablets. The Paper Pro from reMarkable introduces a focus-first canvas: an 11.8-inch e-ink screen that's capable of displaying 20,000 colors. The tablet is also just 5.1 millimeters thin. "It does make the engineering exceptionally difficult," says CEO Phil Hess. "Every tenth of a millimeter counts." The 1.16-lb device boasts a two-week battery life. Hess hints that off-device AI integration is coming shortly: "If we're a thinking surface, then the level of integration we have with these thinking-assisted tools like AI… you can expect much more out of that," he says.
—Chris Stokel-Walker

THERMASOL SOLARIS

An off-grid sauna

Electric saunas work where power is available. Solaris works anywhere the sun shines. The stand-alone room, which Texas-based Thermasol says is the first off-grid solar-powered sauna available in the U.S., features a large solar-tinted window and a heater designed by Finnish parent company Harvia that can reach 170 degrees Fahrenheit within 40 minutes. It's about "moving the industry forward," says Nick Larrick, Harvia's North America region head. The sauna takes one day of sunshine to fully charge and offers two to three hours of use—up to five on sunny days. Users can monitor its battery life on a smartphone app.
—Jared Lindzon

AURA ASPEN

A digital frame for smartphone photographers

As Twitter's first chief scientist, Abdur Chowdhury observed technology's ability to unite and fragment people at once. Hoping to snapshot the good, he co-founded Aura, known for its best-in-class digital picture frames, in 2012. This year, the company released its most versatile offering yet: Aspen's 11.8-inch, anti-glare matte screen has a 4:3 aspect ratio—the same as smartphone cameras—and can display in portrait or landscape mode. It also boasts a remarkably slim, 1.1-inch profile. "Seeing photos of your life—and all the people in it—makes you feel good," Chowdhury says. "If it isn't to bring us closer together, why are we capturing those moments?" **—Derek Rose**

LG PURICARE AEROCAT TOWER

An allergen-reducing cat tree

LG's PuriCare AeroCat Tower benefits cats and humans alike. The sleek, space-saving appliance, launched in 2025, functions as a cat tower, pet health monitor, and air purifier in one. While cats doze in the heated dome seat on top, the air purifier in the base reduces allergens, odors, and cat hair. The seat also has a built-in scale, enabling owners to track their feline's weight and rest habits via LG's ThinQ app. Sojung Kim, an air solution product planner at LG, says the company aimed to design a structure that "allows cats to climb up and down safely and rest comfortably." **—Derek Rose**

MAYTRONICS DOLPHIN LIBERTY 600

A smarter, cordless pool cleaner

"Some competing cordless robots sacrifice cleaning performance for extended run time," says Franck Sogaard, president of Americas, EMEA, and APAC at Maytronics, whose Dolphin Liberty 600 runs cordlessly for 4.5 hours per session. One charge can keep a pool clean for up to two weeks, which the Liberty 600 does using two brushes, suction, and a jet system that blasts crevices in stairs. Its filtration system includes a debris basket for noticeable gunk, and a cartridge that grabs less visible particles. Recalling the robot is the fun part: Stick its Click-Up device into your pool and shake it, and the cleaner comes back to you, climbing up the pool's walls. **—Jessica Klein**

IMMERSIVE TECHNOLOGY

XREAL ONE

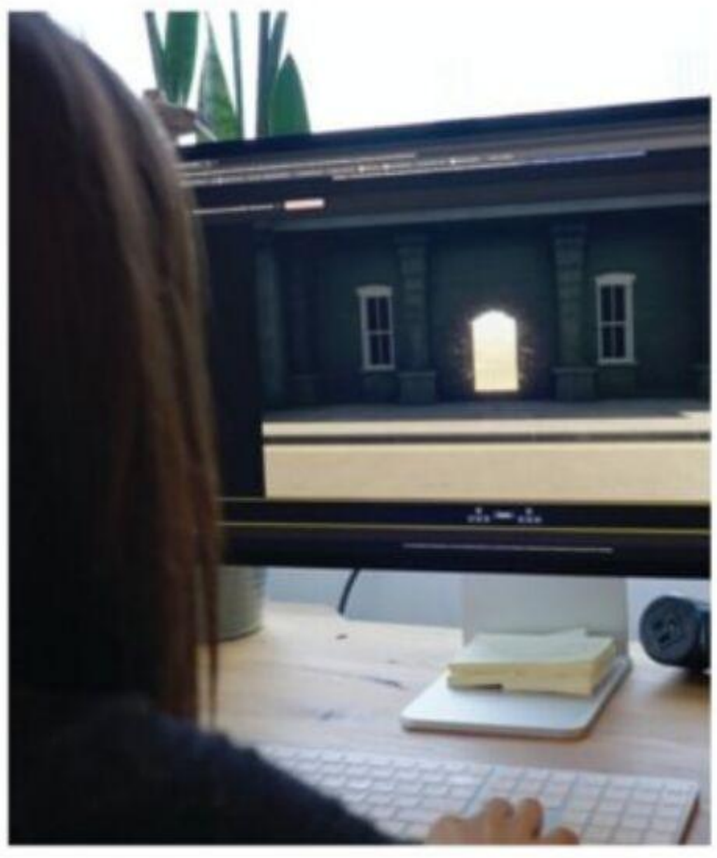
Sleek AR glasses for everyone

Augmented reality promises wonder but can deliver frustration, often requiring a clunky, cumbersome virtual reality headset. XReal's new One series of cinematic AR glasses are an elegant solution. They look like regular sunglasses, and connect via USB-C cable to phones, tablets, computers, or gaming consoles to create a floating virtual screen of up to 310 inches. The built-in spatial computing chip allows the screen to be anchored anywhere, for stable visuals that reduce motion sickness. The result is AR that's "accessible to everyone, anywhere," says co-founder and CEO Chi Xu. "For the first time, people can carry an immersive, cinematic experience in their pocket." **—Matt Alderton**

GOOGLE DEEPMIND GENIE 3

Creating virtual worlds

With most AI models, you enter a prompt and receive a static response. Genie 3, Google DeepMind's world model launched in August, converts text prompts into interactive digital worlds. Tell Genie 3 to create a river, then add a boat or a sea creature; the results are instant, striking, and navigable for several minutes at a time. Currently available to a limited group of academics and creators, according to Google, potential uses extend to education—a student could simulate exploring ancient Rome—or training AI agents in scenarios too risky to test in real life. **—Novid Parsi**



LOGISTICS

AUTOSTORE

Smarter warehouses

As demand for autonomous warehouses grows, AutoStore aims to lead fulfillment innovation. Its modular systems—more than 1,700 of which are in use across nearly 60 countries—combine product-fetching robots with compact, cube-based storage to increase warehouses' capacity, speed, and accuracy. This spring, the Norwegian company introduced a new technology suite designed to make warehouses even more efficient. It includes CarouselAI, AutoStore's first AI-powered robotic picker; VersaPort, a flexible warehouse workstation; and software that helps manage and optimize automated operations. "The future of fulfillment… is about adaptability and making warehouses smarter, not just bigger," says chief product officer Parth Joshi. **—Matt Alderton**

PANDO AI PI

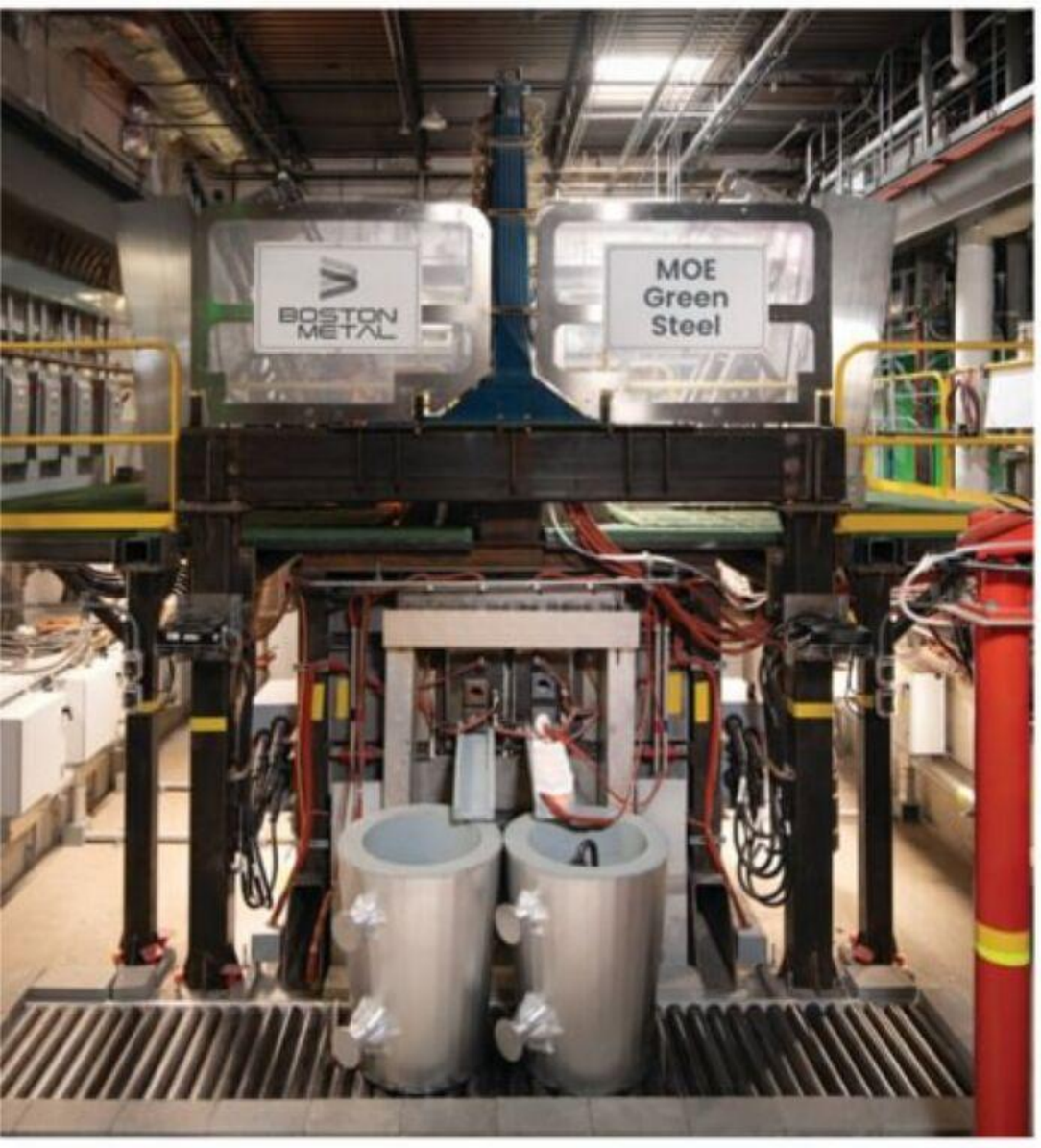
Automated supply-chain operations

Supply chains are complicated. Pi—a suite of AI agents from the U.S. startup Pando AI—manages them. Powered by 16 commercial LLMs, Pi plugs into ERP and transport systems, reads contracts and invoices, and autonomously handles shipping. Founder Nitin Jayakrishnan, who once loaded trucks in his family's printing factory, launched Pi in February. Early deployments in 20 large companies including Apple, Meta, and Procter & Gamble report 90% productivity gains and 10% to 14% cuts in logistics costs. "These are not trials, these are not proofs of concept," Jayakrishnan says. "These are full-scale global rollouts of AI technology." **—Chris Stokel-Walker**

GATIK DRIVER

Autonomous delivery trucks on the road

Self-driving trucks are making daily deliveries across North America, courtesy of Gatik. Since its founding in 2017, Gatik's success has come from owning one lane: short-haul, fixed-route autonomous deliveries between distribution centers and stores for clients like Walmart and Kroger. CEO Gautam Narang says Gatik is already "running the largest autonomous trucking fleet in North America," but last year set its sights on more ambitious expansion. In 2024, the company partnered with Isuzu to mass-produce SAE Level 4 autonomous trucks (which can drive fully independently on certain routes); it is now operating daily driverless operations in Texas, Arkansas, California, and Ontario, Canada. **—Gabriela Riccardit**



MANUFACTURING & MATERIALS

BOSTON METAL MOLTEN OXIDE ELECTROLYSIS

Climate-friendly steel

Zero-carbon steel is a step closer to reality. In March 2025, Boston Metal completed an industrial test of its Molten Oxide Electrolysis (MOE) technique, which uses renewable electricity to convert iron ore directly into pure liquid metal, without any CO_2 byproduct. Decarbonizing steel, says CEO Tadeu Carneiro, "is one of the most powerful levers for climate progress." The test used a school-bus-sized reactor built to withstand corrosive, lava-hot conditions, and produced more than one ton of metal. Carneiro says the company is "on track" to deliver cost-competitive green steel technology by 2028. **—Joe Mullich**

SWAY TPSEA FLEX

Compostable retail bags

Plastic bags are one of retail's biggest eco-bugbears. But Julia Marsh, CEO and co-founder of Sway, created an environmentally-friendly alternative with TPSea Flex: a glossy, translucent film spun from farmed seaweed that can be fed through legacy plastic-bag lines and matches polyethylene's toughness, but is fully compostable. Marsh launched TPSea Flex in 2024 after testing 400 different formulations in her garage, and has attained $8.5 million in funding to date—plus a client list including J.Crew and Prana. "We will be tripling volumes every year, and we have functionally no limit on capacity," Marsh says. About 100,000 pounds of TPSea Flex will end up in millions of shopping bags this year. **—Chris Stokel-Walker**

BAMBU LAB H2D

Desktop fab factory

Bambu Lab is one of the best known names in 3D printing, and its new H2D printer is its best equipped yet. The device's dual nozzle setup can print as thin as 0.2 millimeters. Materials extruded through it—which pass by 15 strategic sensors before extrusion—can be heated to 350° C, and can lay out 600mm of materials a second on its plate. It also tracks its work with an AI-supported camera to avoid mishaps. Add in an optional laser engraver and pen and the H2D becomes a complete fabrication machine. **—Chris Stokel-Walker**

HONOR SILICON-CARBON BATTERY

Slimmer, longer-lasting power

Lithium-ion batteries—which most devices currently use—are hitting their density limits, capping how slim foldable devices can be. Honor's new battery design allows them to compact materials while extending battery life. After launching a silicon-carbon battery with 10% silicon in 2024, the company this year announced a similar battery with 25% silicon at just 2.3mm thick and boasting 6,100mAh of power. The new battery debuted in the Honor Magic V5 phone released in July (with a usage time of 35+ hours), and will soon be integrated into Honor's watches and PCs. **—Chris Stokel-Walker**

XERION DIRECTPLATE

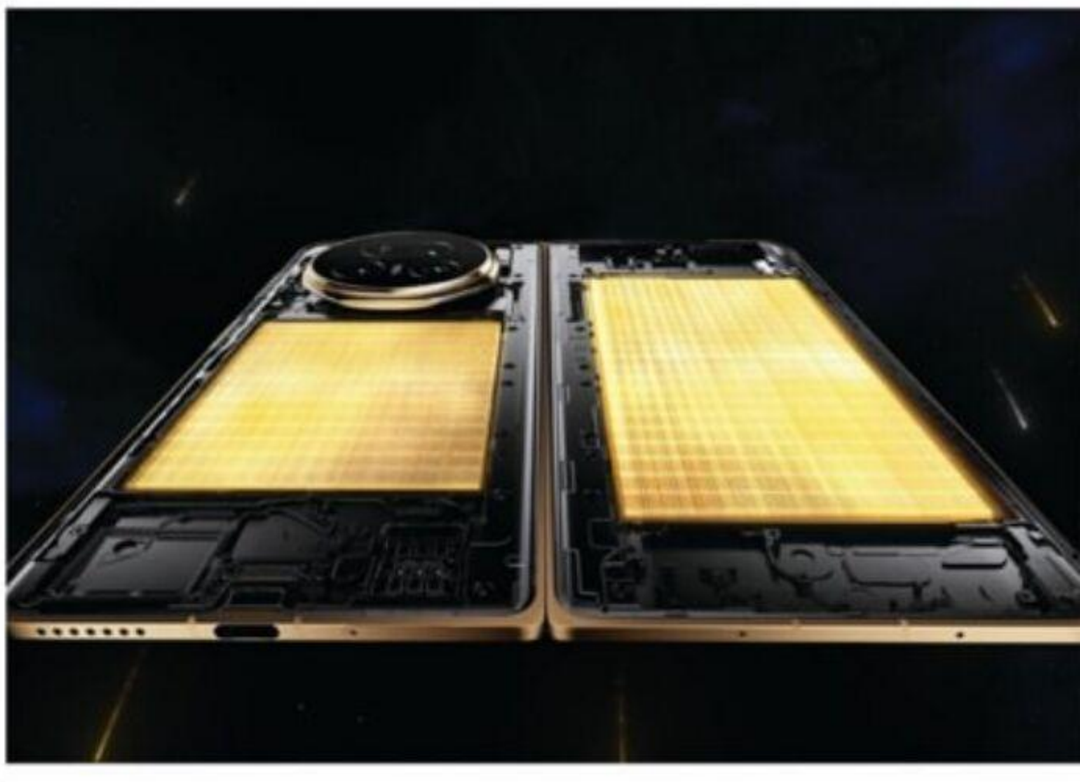
Cobalt breakthrough

For decades, the U.S. has relied entirely on foreign refineries—mainly in China—for cobalt, an essential element in EV batteries, fighter jet engines, and other critical technology. That began to change in April, when Xerion Advanced Battery Corp opened a pilot plant using a new refining approach in Dayton, Ohio. Xerion's DirectPlate technology uses electricity and molten salt to extract pure cobalt directly from raw materials in a single step, simplifying the complex—and far more expensive—process employed overseas. CEO John Busbee says DirectPlate puts the U.S. on the path to rebuild "mineral independence." Xerion plans to scale production up to 2,000 tons of cobalt annually by early 2027, about 25% of current U.S. demand for the lustrous blue element. **—Joe Mullich**

FIBRECOAT RADAR-ABSORBING MATERIAL

Making planes undetectable

An invisibility cloak is still the holy grail of stealth, but FibreCoat's radar-absorbing material is close: The lightweight plates shield fighter jets, drones, and satellites from being seen by radar. Most stealth engineering uses angular design to deflect radar waves or special paints that have to be regularly reapplied. FibreCoat's malleable plates are made from proprietary metal-coated glass and basalt fibers mixed with layers of polymer plastic to dissipate a broad range of radar waves, says CEO Robert Brüll. Launched this year, FibreCoat already supplies governments and commercial companies like French materials giant Saint-Gobain. The technology could also protect EVs and buildings from electromagnetic interference, Brüll says. **—Charlotte Hu**



VERTEX JOURNAVX

A painkiller breakthrough

Over-the-counter pain treatments often don't do enough, while opioids block pain signals but can be extremely addictive. Vertex broke those barriers with Journavx, the first non-opioid prescription painkiller in more than two decades, earning FDA approval in January. The drug targets one of multiple sodium channels that is involved in regulating pain neurons in tissues throughout the body, but not in the brain, which allows it to avoid the habit-forming risk of opioids. "Pain affects everyone. [It's] an incredibly important disease area where we thought we could make a big difference," says CEO Reshma Kewalramani. **—Alice Park**

NJEMBUMA COMPANY OBM-DRAPE

Saving lives in childbirth

Severe bleeding after childbirth can be life-threatening. Nairobi-based Njembuma Company developed the Objective Blood Measurement (OBM)-Drape to detect heavy bleeding early. The biodegradable device is placed on the delivery bed to collect and measure the amount of blood loss during births, so healthcare workers can intervene if blood loss reaches certain levels, says operations director Simon Maina. A 2023 study found that blood-collection drapes led to a lower risk of complications and death during childbirth. This year, the company plans to increase production from 300,000 to 2 million drapes. **—Erica Sweeney**

MBIOTA LABS ELEMENTAL DIET

Tastier medical food

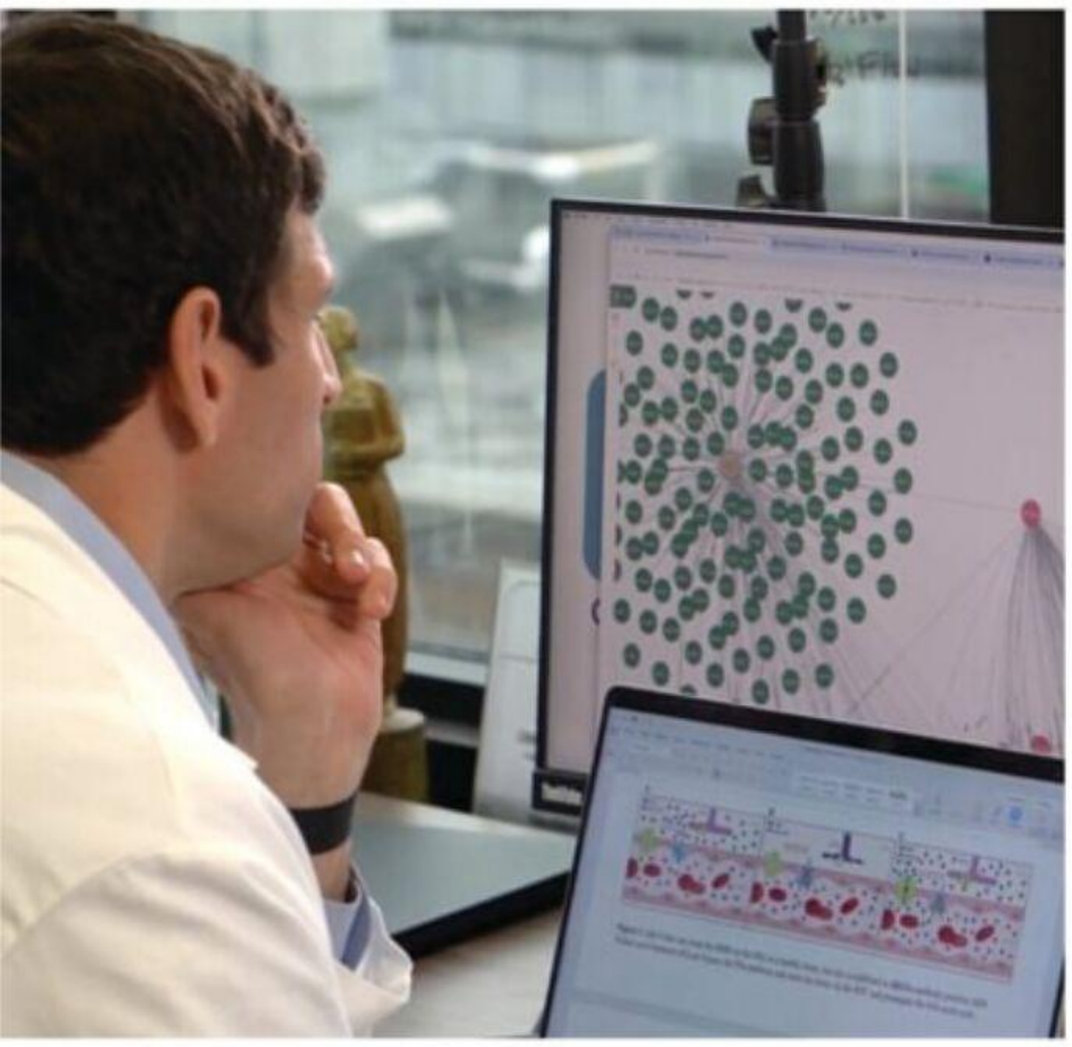
Elemental diets and medical meal replacements have been shown to be effective in reducing gut inflammation and bacteria overgrowth, but palatability is often a barrier for patients who need them. "It tastes like hot garbage, and the amino acids stick to your tongue so you have this horrific taste in your mouth all day," says Nicola Wodlinger, CEO of Mbiota Labs, which created an elemental diet intended to be tastier for patients. Researchers with Cedars-Sinai and Mbiota found this year in clinical trials that its formula led to higher compliance among patients treating small intestinal bacterial overgrowth (SIBO) and intestinal methanogen overgrowth (IMO), alongside positive results for improving gut biome. **—Allana Akhtar**

MEDICAL & HEALTHCARE

BRINTER 3D BIOPRINTED TISSUE

Printing new rotator cuffs and ACLs

Ruptured rotator cuffs and torn ACLs heal slowly after conventional suturing—then often fail when the joint gets back to work. Brinter 3D-prints three-layer implants using bioinks made from living cells and biomaterials, whose polymer core provides strength while the printed collagen covers guide new cells to rebuild the tendon. The company, headquartered in Wake Forest's regenerative-medicine hub, is currently testing its printed outputs in animal trials, and in the National Laboratory aboard the International Space Station. "We could literally have one of our implants in a human by the end of next year," co-founder Tom Alapaattikoski says. Next up: cartilage—and eventually, whole organs. **—Chris Stokel-Walker**



COLUMBIA UNIVERSITY STAR METHOD

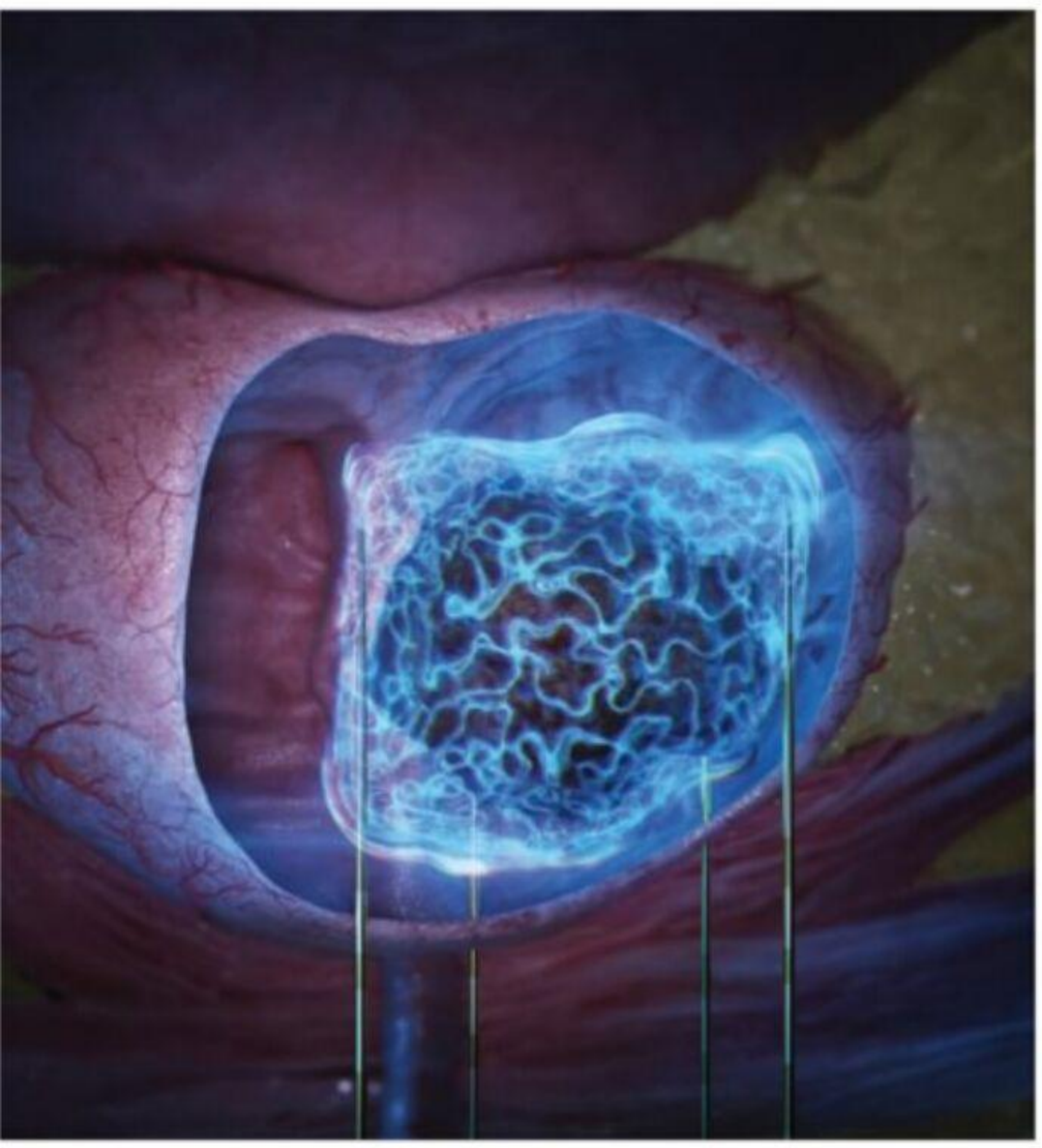
AI fertility aid

AI is generating new hope for infertility. About 10% of men with infertility have azoospermia, a low amount of sperm in semen. It's a challenge for human technicians to detect those rare sperm, but Columbia researchers, led by Dr. Zev Williams, developed the STAR (Sperm Tracking and Recovery) method to scan millions of semen images to detect dozens, and isolate the viable sperm for use in IVF. "It can do that in a couple of hours—and so gently that the sperm we recover can be used to fertilize an egg," Williams says. After 20 years of trying, the first couple to use STAR is expecting their first child this year. **—Alice Park**

EVERY CURE MATRIX

Treating the untreatable

Less than 25% of recognized diseases have treatments that are approved by the U.S. Food and Drug Administration. The nonprofit Every Cure's MATRIX platform uses AI to figure out which already-approved drugs could help patients with completely different conditions—a process called drug repurposing. So far, the Every Cure team has identified or advanced 14 repurposed drugs that have become effective treatments for five rare diseases. "It's so gratifying and rewarding when you see someone improve on a drug that the system wasn't advancing for them," says co-founder and president Dr. David Fajgenbaum. **—Angela Haupt**



YSEOP COPILOT

An AI assistant for science writers

Generative AI firm Yseop is transforming regulatory writing in pharma, turning what was once a lengthy process into a one-click task. Its Copilot AI assistant streamlines the drafting, editing, and finalization of documents, from clinical study reports to patient narratives and regulatory paperwork like CMC submissions. "We are building the world's first automated content factory for pharma," says CEO Emmanuel Walckenaer. Directly within Microsoft Word and Veeva Vault, the platform uses pre-trained LLMs to generate content that meets standards for accuracy and compliance. Since its launch in 2023, Yseop Copilot has been incorporated by Eli Lilly, Novartis, GSK, and AstraZeneca. **—Lauryn Higgins**

ANGIODYNAMICS NANOKNIFE

A minimally invasive prostate cancer treatment

NanoKnife delivers a localized electrical pulse that can treat prostate cancer. Developed by medical device firm AngioDynamics and cleared by the Food and Drug Administration in December 2024, it offers men with intermediate-risk cases of prostate cancer a minimally invasive option before doctors turn to radiation or other traditional cancer treatments that can damage nearby nerves. "It's not therapy that is appropriate for all men," says David Golombos, a urologic oncologist at Robert Wood Johnson University Hospital in N.J., "but this serves as a great option to treat localized prostate cancer, minimizing quality of life side effects" like erectile dysfunction. **—Allana Akhtar**

CERIBELL POINT-OF-CARE EEG

Rapid brain testing

Speedy treatment of potentially deadly seizures is vital, yet hospitals often need hours to set up EEG tests to measure brain waves. Ceribell's system, which includes a data-collecting headband, a pocket-sized recorder, and cloud-based software, allows hospitals to begin patient monitoring within minutes. "Everybody in the hospital has a heart monitor, but we don't monitor our other most important organ," CEO Jane Chao says. Now at more than 500 hospitals, thousands of ER doctors are using EEGs regularly for the first time. By expediting diagnoses, Ceribell's system leads to a 20% reduction in severe disabilities and cuts ICU stays in half, clinical studies show.

—Jared Lindzon

MEDICAL & HEALTHCARE

CRESILON TRAUMAGEL

A simple solution to stop bleeding in seconds

Seconds matter when controlling blood loss after a traumatic injury. Every year, about 60,000 Americans die from hemorrhage. Brooklyn, New York-based Cresilon created Traumagel, a plant-based gel physicians and first responders can apply to wounds through a prefilled syringe that forms a mechanical barrier to quickly stop even severe bleeding and enable clotting. Compared to "old-fashioned" methods like stuffing gauze into a wound, applying pressure, or using tourniquets, CEO and co-founder Joe Landolina says the gel "simplifies the process drastically." The product received FDA clearance in 2024 and is now used in ambulances and hospitals nationwide. **—Erica Sweeney**

MEDTRONIC BRAINSENSE ADBS

Controlling Parkinson's tremors

While there is no cure for Parkinson's disease, there's now a better way to control its involuntary muscle movements. In February, the FDA approved Medtronic's BrainSense adaptive deep brain stimulation, which regulates the triggering brain signals with more real-time adjustments than previous methods. Surgeons implant a stimulator in the patient's chest, which is connected with electrodes to the brain. The device continuously analyzes neural activity for brainwaves typical of tremors, and steps in to modify those signals when they are detected. The dynamic, real-time adaptability makes it more accurate, providing just the right stimulation to reduce tremors. **—Alice Park**

SANOFI MODULUS

Quicker vaccine production

The world's largest producer of flu vaccines is changing the way those shots, and potentially other medical products, are made. Companies traditionally dedicate an entire facility to one biologic product, but Sanofi is pioneering a modular system—called Modulus—that allows it to manufacture up to four different products at a time in a process inspired by the auto industry's compartmentalized production. Patrick Pommares, head of evolutive vaccine facility manufacturing operations, says different "panels" perform specific steps in the process, and can be interchanged to streamline production. "We can plug and produce," he says. Sanofi's first two Modulus systems, in France and Singapore, will begin production by the end of 2025 and in 2026, respectively. **—Alice Park**

GILEAD YEZTUGO

Preventing HIV

Treating HIV has changed dramatically since the first antivirals in the 1980s, but this year preventing the disease took a major leap forward. People at high risk of HIV infection could previously get a drug injected once every two months to protect them from getting HIV, but a new drug, Gilead's Yeztugo, was FDA approved in June to do the same with only two shots a year. (Gilead is already testing an annual shot.) CEO Dan O'Day says he is committed to ensuring it is widely available. "All of us are extraordinarily excited about the opportunity this brings to bend the arc of the epidemic," he says. **—Alice Park**

ABRIDGE FOR NURSES

Cutting paperwork

Nurses supply most of our healthcare, but many technological advancements are geared toward doctors. Now Abridge, an AI-powered medical transcription platform that previously turned doctors' conversations with patients into useful, billable notes, is lightening the load on nurses. "Administrative burden is really driving nurses away from the profession," says Julia Chou, chief operating officer of Abridge. The new platform was designed to capture the nuances of nursing documentation, which involves entering structured data like a patient's vital signs, including their blood pressure, heart rate, and temperature, and was deployed at Mayo Clinic Arizona in early 2025.
—Angela Haupt

MIRVIE ENCOMPASS

Predicting preeclampsia

Each year around the world, 500,000 fetal deaths occur due to preeclampsia, a condition that causes high blood pressure, endangering the mother as well. Previously, doctors had no way of identifying high-risk moms before they showed symptoms, but a new test called Encompass changes that. It's the first diagnostic to use cell-free RNA in blood to predict complications four months in advance. In a 10,000-patient study published this spring, Encompass correctly identified 91% of women who would develop preterm preeclampsia. Launched in May, Encompass is now available through physician practices like Advantia Health and partnerships like WIN.
—Matt Fuchs

EARFLO

Helping kids clear their ears

Chronic ear infections are a leading reason kids undergo surgery requiring anesthesia—some 700,000 in the U.S. have ear tube surgery each year. Earflo offers a simpler alternative. As kids swallow water—which naturally opens the ear tube leading to where fluid is trapped—Earflo gently puffs air to help release the fluid. In a clinical trial, 86% of children using Earflo showed significant hearing improvement after four weeks. Nearly 90% avoided surgery altogether. Earflo is seeking FDA clearance and looking to debut commercially this year. It's already won the World Congress of Audiology Innovation Prize.
—Matt Fuchs

MEDICAL & HEALTHCARE

PROPRIO PARADIGM

Making real-time maps for surgeons

Over 1 million spine surgeries are performed annually in the U.S., but success rates are low, leading to repeat operations. Proprio's Paradigm is an FDA-cleared, real-time 3D surgical guidance system to improve outcomes. It uses arrays of sensors and cameras to build a live digital twin of the patient's body that acts as a map—and also requires fewer traditional scans, thus reducing radiation exposure. The platform has already been used in over 100 procedures with revision-surgery risk dropping from about 50% to less than 10%, the company says. After its first clearance in 2023, Paradigm has rolled out to top medical centers such as Duke Health. **—Matt Fuchs**

ABBOTT I-STAT TBI

A blood test for brain injury

During head traumas like concussions, the brain's cells release two proteins, GFAP and UCH-L1. Abbott's i-STAT Traumatic Brain Injury (TBI) test only takes about 15 minutes to look for signs of brain injury by checking for these biomarkers, offering a much quicker alternative to CT scans—the go-to diagnostic since the 1970s. The medical community long thought a TBI blood test was impossible, largely because of the blood-brain barrier. "It was a tall order, and there was no road map," Dr. Beth McQuiston, Abbott's medical director of diagnostics, says. The test was FDA cleared in 2024, and MotoAmerica has already deployed Abbott's test during motorcycle races. **—Kali Hays**

RAPIDAI LUMINA 3D

Catching strokes early

There is a severe shortage of healthcare workers in the U.S., and neuroradiologists and qualified technicians for CT scans are no exception. RapidAI aims to fill some of those gaps by speeding up diagnostics. This year, the company received FDA clearance for Lumina 3D, which creates near-immediate 3D imaging from a CTA scan (commonly used to catch clots and aneurysms). David Stoffel, a doctor and the chief business officer of RapidAI, says hospitals using Lumina are able to read scans faster and more quickly catch strokes. "Time is the difference between a person being wheeled out or walking out," Stoffel says. RapidAI's technology is in use in hospitals in over 100 countries worldwide. **—Kali Hays**

AKARA AI SENSOR

More efficient ORs

Operating rooms waste more than two hours a day on inefficiencies. Irish healthcare tech company Akara is tackling this with its AI Sensor. "We think of it as being akin to an air traffic controller for the operating room," says CEO Conor McGinn. The system installs directly in ORs, using AI-powered thermal sensing to track surgeries, send real-time alerts to staff, and generate precise scheduling data to reclaim lost time. Hospitals including the ambulatory surgery division of Cedars-Sinai in Los Angeles have started using the system since its launch last year, with five more planned across the U.S. and Europe. **—Lauryn Higgins**

COLOSSAL BIOSCIENCES NON-INVASIVE BLOOD CLONING

Simplifying cloning

Cloning can be a vital tool for saving some of the 47,000 species threatened with extinction. Colossal Biosciences has found a way to make it easier. Cloning previously involved surgically harvesting skin or tissue cells from the donor animal, but Colossal has successfully cloned animals using endothelial progenitor cells (EPCs), which line blood vessels and can be harvested with a simple blood draw. EPCs are also heartier than skin cells, and divide faster. "EPCs offer a more humane, efficient pathway to safeguarding genetic heritage for future generations," says CEO and co-founder Ben Lamm. **—Jeffrey Kluger**

CELLARES CELL SHUTTLE

Speeding up cell therapies

Cell-based treatments, such as CAR T-cell therapies that help the immune system fight cancer and autoimmune diseases, are some of the most exciting new innovations in medicine. But they are often customized to each patient, making manufacturing arduous. Cellares's Cell Shuttle is a novel system that leverages robotics to streamline production. It can make 16 different cell therapies at a time—enough to treat as many patients in one year as have received cell therapies in the U.S. so far. This year, it earned the FDA's Advanced Manufacturing Technology designation, and the first factory is set to become operational in 2026 in New Jersey, with others planned for Europe and Japan. **—Alice Park**

MEDICAL & HEALTHCARE

SYNCHRON STENTRODE

Developing groundbreaking neurotechnology

Synchron's brain-computer interface, or BCI, aims to enable people who are paralyzed or have severe motor impairment to control smartphones or other digital devices using only their thoughts. The investigational device, a tiny array of electrodes, is implanted into a blood vessel in the brain without requiring surgery, similar to how stents are placed. "It's transformative that there's now a potential therapy to overcome a broken nervous system," says CEO and founder Tom Oxley. The Brooklyn, N.Y.-based company has conducted two clinical trials—one patient was recently shown controlling an iPad, making it the first BCI to do so—and is preparing for a larger-scale study in the coming months. —**Erica Sweeney**

ONMED CARESTATION

Doctor-in-a-box

As hospitals and doctor's offices close across rural America, a start-up has come up with a potential solution: the OnMed CareStation, a futuristic doctor's office in a box. Anyone can walk into a CareStation pod—the size of a small exam room—without an appointment, press a "start" button, and be connected over video chat with a licensed clinician who walks them through taking their own measurements with a scale, blood pressure machine, infrared thermometer, and other diagnostic tools. In many states, OnMed's clinicians can even prescribe medicine. OnMed already has 26 care stations operational in seven states, and expects to have 40 more open by the end of 2025. —**Alana Semuels**

EISAI AND BIOGEN LEQEMBI IQLIK

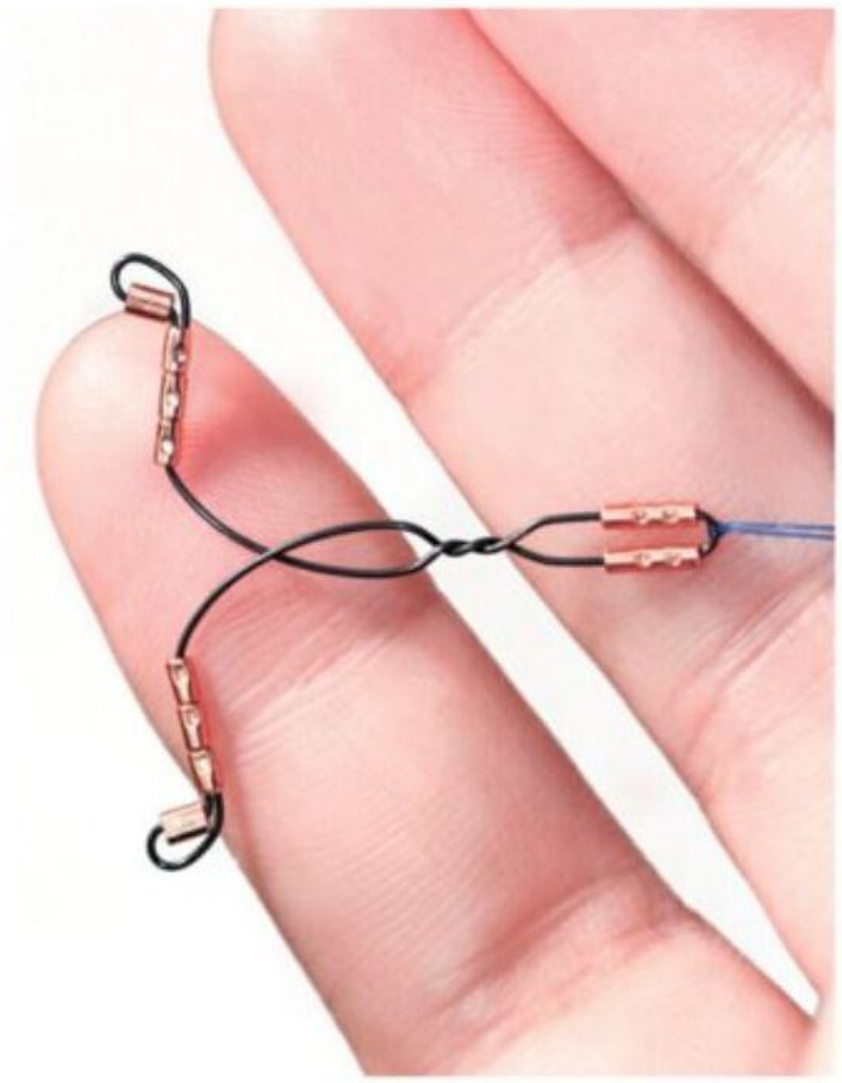
At-home Alzheimer's treatment

Patients with mild to moderate Alzheimer's disease can now treat themselves at home with the latest drug for the neurodegenerative disease. In August, the FDA approved the first self-injectable form of lecanemab, which was originally approved in 2023 as an IV infusion that people had to receive at a clinic or hospital. The drug slows progression of the disease by reducing the build up of different forms of the protein amyloid in the brain. Patients give themselves the injections of the at-home version, called Leqembi Iqlik, using an auto-injector. Iqlik is approved as a maintenance treatment for Alzheimer's, so once patients complete a round of treatment with the IV infusions over 1.5 years, they can then transition to Iqlik to maintain the benefits of the drug. —**Alice Park**

SETPOINT SYSTEM

An implant to treat an autoimmune disease

SetPoint Medical is offering patients with the autoimmune disorder rheumatoid arthritis something close to a cure. The company's SetPoint System—which was FDA approved in July—is a small neck implant that gives an electrical jolt for one minute a day to the vagus nerve, and has been shown to help regulate the body's immune response. "This is just the beginning" of neuromodulation devices to treat chronic inflammatory illnesses, says Murthy Simhambhatla, SetPoint's CEO. Already the company is seeing positive results in studies for applications for Crohn's disease and multiple sclerosis, and has partnered with Northwell Health to deliver the SetPoint System to treat rheumatoid arthritis. —**Kali Hays**



SEBELA MIUDELLA

A groundbreaking hormone-free IUD

Approved by the FDA in February, Miudella is the first hormone-free copper IUD in the U.S. to achieve this designation in 40 years—and the smallest available. Its flexible nitinol frame compresses into a smaller insertion tube, conforms to different uterine shapes, and allows for strategic placement with less material, reducing heavy bleeding and cramping. "You shouldn't have to trade off… for a highly effective contraceptive," says Kelly Culwell, an OB-GYN and head of research and development at Sebela Women's Health. Miudella comes in a tapered inserter—making insertion easier—and prevents pregnancies for up to three years. **—Lauryn Higgins**

ARS PHARMA NEFFY

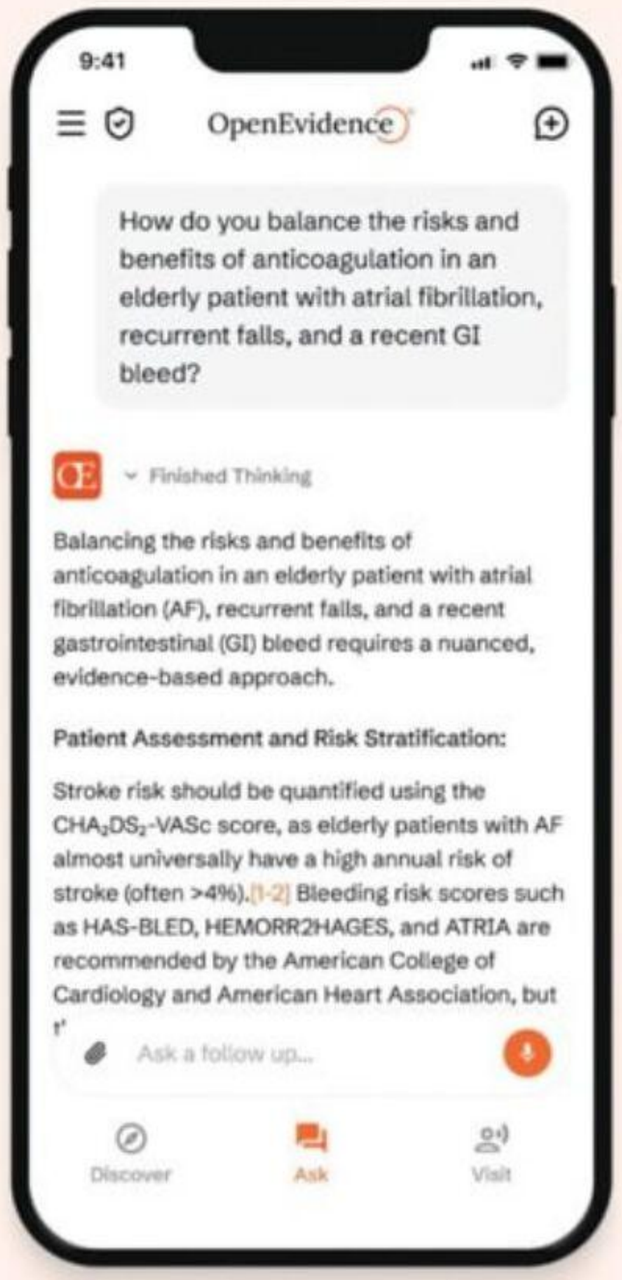
Needle-free epinephrine

For decades, people with severe food allergies had one emergency option: epinephrine injections, which many fear and delay—research shows just 10 to 15% of people administer them promptly during anaphylaxis. Neffy, an epinephrine nasal spray from Ars Pharma, makes it less scary. "Too many people hesitate in a crisis because they're afraid of the needle," says Richard Lowenthal, CEO of Ars Pharma. Using the novel absorption enhancer dodecyl maltoside, Neffy delivers injection-like effectiveness through the nasal mucosa. In March, the FDA approved Neffy's use for children 33 lbs. (approx. 4 years) and up—an expansion of its initial approval for anyone over 66 lbs. in August 2024. **—Lauryn Higgins**

OPENEVIDENCE

Spreading medical research

For physicians—particularly those in rural areas—OpenEvidence is a lifeline to high-quality, peer-reviewed medical knowledge. "It does what technology promises but so rarely delivers: real, democratic access to the best information and reliable answers," says founder Daniel Nadler. The AI-powered search engine aggregates up-to-date guidance and clinical resources typically reserved for the nation's largest institutions; since launching in 2023, it has signed content agreements with *JAMA* and *The New England Journal of Medicine*. By giving all verified U.S. healthcare professionals free access to the tool—the company says nearly 40% of U.S. doctors are now using it—OpenEvidence is making advanced knowledge truly accessible for all. **—Lauryn Higgins**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OpenEvidence
How do you balance the risks and benefits of anticoagulation in an elderly patient with atrial fibrillation, recurrent falls, and a recent GI bleed?
Finished Thinking
Balancing the risks and benefits of anticoagulation in an elderly patient with atrial fibrillation (AF), recurrent falls, and a recent gastrointestinal (GI) bleed requires a nuanced, evidence-based approach.
Patient Assessment and Risk Stratification:
Stroke risk should be quantified using the CHA2DS2-VASc score, as elderly patients with AF almost universally have a high annual risk of stroke (often >4%).[1-2] Bleeding risk scores such as HAS-BLED, HEMORR2HAGES, and ATRIA are recommended by the American College of Cardiology and American Heart Association, but
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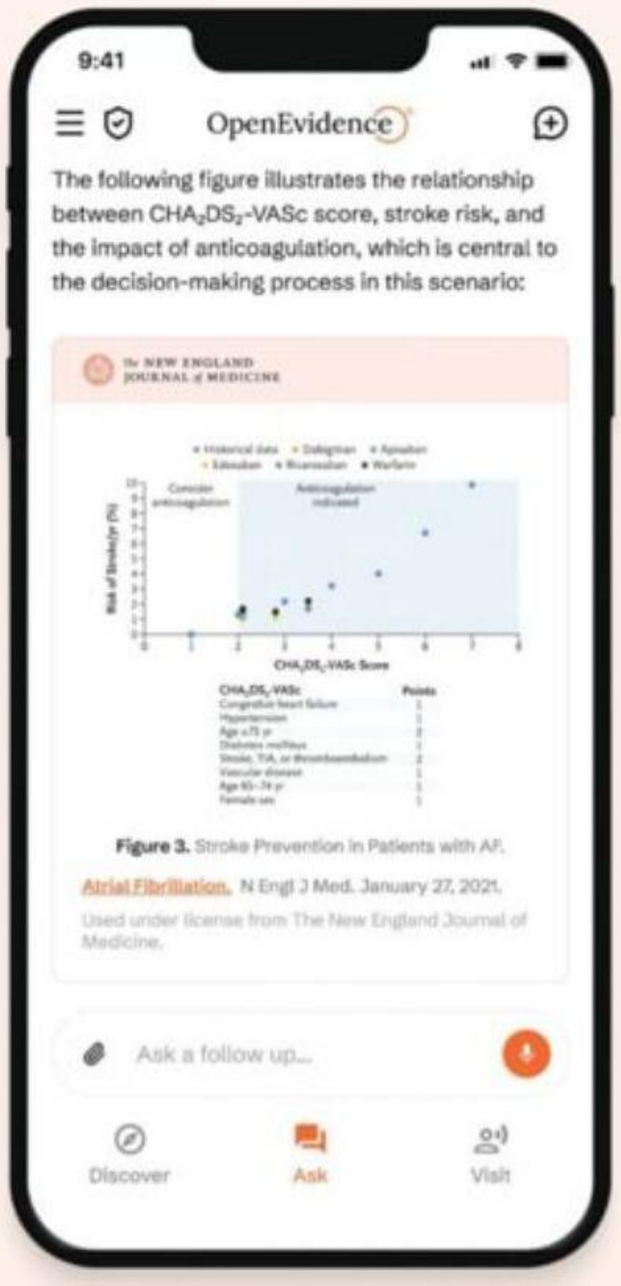
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OpenEvidence
The following figure illustrates the relationship between CHA2DS2-VASc score, stroke risk, and the impact of anticoagulation, which is central to the decision-making process in this scenario:
THE NEW ENGLAND JOURNAL of MEDICINE
Figure 3. Stroke Prevention in Patients with AF.
Atrial Fibrillation. N Engl J Med. January 27, 2021.
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KIZIK JUNO

Hands-free snow boot

Lacing and unlacing boots all winter is tiresome at best, impossible for those with motor challenges. “Winter boots are notoriously clumsy to get on and off,” says Andreas Harlow, Kizik’s senior vice president of product design. The company’s hands-free Juno snow boot offers a solution: a patented cage technology at the back of the boot’s heel, which guides a foot forward and then snaps to lock it in place—no bending down necessary. In October, Kizik launched the Juno 2 boot, offering the similar hands-free functionality in both “high” and “low” boot options. **—Leslie Horn Peterson**

BENJILOCK FINGERPRINT PADLOCK

A weatherproof biometric padlock

Lost key? Never again. Underneath its royal blue protective flap, BenjiLock’s patented Outdoor Fingerprint Padlock simply uses a biometric sensor from the Swedish company Fingerprints to unlock. This year, the company introduced a hardy stainless steel, IP68 waterproof version. “There's no app, no Bluetooth, and no Wi-Fi,” says CEO and founder Robbie Cabral. “You're not able to try to hack it.” Each USB-rechargeable device (the battery lasts up to a year on a single charge) can recognize 10 pre-programmed fingerprints and features built-in LEDs and audio indicators, making it accessible for many of those with disabilities. **—Alison Van Houten**

THE NORTH FACE DOTKNIT

A better knit to keep dry and warm

Originally designed to outfit some of the world's elite alpine athletes, The North Face's newest Advanced Mountain Kit features a collection of layers and technologies for those looking to stay dry on sweaty cold-weather adventures. The updated DotKnit fabric incorporates both wool and synthetic material into a stippled textile, which pairs hydrophobic inner yarns with hydrophilic outer ones. “Those little dots are windows that allow the moisture to come through,” says Cory Olson, global head of innovation at The North Face. “It’s taking any sweat that's generated on the body and immediately expelling it away from you.” The North Face sells a variety of garments made from DotKnit. **—Alison Van Houten**

ROYAL ROBBINS MOSQUITO PROTECTION TECHNOLOGY

Mosquito-blocking fabric

Mosquitos are the world's deadliest animal—and their threat is likely increasing. Traditional defenses such as spray-on clothing insecticides like permethrin or skin-applied repellents like Deet not only demand frequent reapplication but have also faced scrutiny as potential health hazards. As an alternative, outdoor apparel maker Royal Robbins launched proprietary Mosquito Protection Technology this spring: a tight-weave fabric with an imperceptibly contoured structure that's 92% effective at preventing mosquitos' proboscises from penetrating it, according to the company—all while retaining breathability. It's a chemical-free solution that lasts as long as the garment does, with zero reapplication required. **—Alison Van Houten**

SNOW SECURE INSULATION MAT

A ski-season saver

"People think it's easy to store snow in Finland," says Antti Lauslahti, CEO of Snow Secure. In fact, 24-hour sunshine necessitates snow farming, the practice of preserving snow berms between ski seasons. The Finnish company's white extruded polystyrene mats, laid on top of natural or manufactured snow drifts at the end of ski season, both insulate and shield from sun and rain to retain the snow when it gets warmer. The European stalwart's claim that it has the best snow-retaining ratio on the market is proving alluring in the climate change era. It was recently adopted in North America, including at resorts in Idaho and New Mexico. **—Alison Van Houten**

ANKER SOLIX EVERFROST 2

An ice-free, solar-powered cooler

Anker Solix's EverFrost 2 Electric Cooler doesn't require ice, can stay cold for days, and is quick to charge ahead of a camping trip or another off-grid adventure. The Chinese company invented a battery-powered, air-cooling technology for the cooler, which comes in three sizes. The 40-liter version is easily powered up by a wall outlet, and cools to a set temperature within minutes. (Other charging options are a car socket, USB-C cord, or portable 100W solar panels—which Anker Solix also sells.) A mixture of beer, produce, meats, and snacks fit inside. Two caveats: It's very heavy, and costs between $600 and $760. **—Catherine Boudreau**

OUTDOORS

TICK MITT

Easy tick removal from pets and clothes

Among the 475,000 CDC-recorded yearly cases of Lyme disease in the U.S. are several of Olivia Abrams' family members—including Abrams. "Ticks are becoming…an invasive species," she says, spreading to new parts of the country but remaining tough to spot. Abrams found that car shammies, used to wipe drool off her family's mastiffs, picked them up easily, so she developed a microfiber mitt that customers can rub over dogs, skin, or clothes after outdoor activities. The loops in the microfiber snag ticks' hook-shaped legs and pull them off, helping to prevent bites. **—Jessica Klein**

ARC SPORT

A stylish electric boat for wake sports

Gas boats can be loud, expensive, and polluting. Electric boats solve all those problems, says Arc Boats CEO Mitch Lee. The company's attractive 23-ft. electric Arc Sport is designed for four to six hours of wake surfing, water skiing, inner tubing, or just a day out on a lake. It also has a suite of high-tech features including full joystick control that allows lateral movement and wake setting. Arc Boats is applying the same powertrain to tugboats slated to operate in the port of Los Angeles by 2027. "We are focused on building better boats. Electric power trains are fundamentally better for the marine environment," Lee says. **—Charlotte Hu**

PARENTING

MOONBIRD MOONBUDDY

A breathing coach for children

After launching Moonbird's first breath-coaching relaxation tool, co-founders Stefanie and Michael Broes received surprising feedback: Though designed for adults, it often ended up in the hands of customers' children. The Broes siblings made a few kid-friendly adjustments, and Moonbuddy was born. Shaped like a variety of cute animals, the screen-free device simply expands and contracts in-hand, allowing children to sync their breath—an intuitive, tactile process that helps them relax, focus, and fall asleep. "Children really resonated with the idea that when a small animal breathes and its belly expands, their bellies expand as well," says Stefanie Broes. **—Derek Rose**

NARA ORGANICS WHOLE MILK INFANT FORMULA

A first-of-its-kind formula

Over two thirds of babies born in the U.S. rely on formula for nutrition, yet when Nara Organics founder Esther Hallam gave birth in New York state, she couldn't find a single whole milk option (full fat is recommended for brain development)—let alone one without skim milk, sugar, palm oil, or corn syrup (many of which are banned from European formulas). This July, Nara Organics Whole Milk Organic Infant Formula became the first and only FDA-registered organic whole milk infant formula that meets both U.S. and E.U. standards. Hallam hopes her high quality formula will help break the stigma around formula feeding. **—Nina Derwin**

FUTURE FAMILY IVF INSURANCE

Pregnancy peace of mind

One in six couples globally experience infertility. IVF is increasingly common, but it's also expensive, with rounds costing upwards of $20,000 per cycle, driving many families into debt. Future Family CEO Claire Tomkins, who went through six rounds of IVF to have her three children, knew something had to change. "Our goal is that every family feels financially secure to take a chance on IVF," Tomkins says. Her company's new "Baby or Your Money Back" IVF insurance offering is that simple: Pay a premium, and if you're not taking a baby home after two rounds, you get reimbursed. The result? More peace of mind and less financial risk. **—Leslie Horn Peterson**

FRIDA MOM 2-IN-1 MANUAL + SILICONE SUCTION BREAST PUMP

A streamlined to-go pump

Frida entered the breast pump category this spring with a dual-function device that is both manual pump and passive-suction milk collector. CEO Chelsea Hirschhorn says the idea was born of wanting to streamline the "abundance of stuff" that accompanies babies; Frida's thoughtful design may cut back on the number of parts to clean each day. In tests, it matched an electric pump in output—albeit with more elbow grease required—and the passive collector stayed on firmly. More than two-thirds of Frida's 250+ employees have kids under 5, Hirschhorn says, so "the focus groups are within the walls of Frida HQ." **—Lily Rothman**

PARENTING

PREVELO BIKES ZULU ONE AND ZULU TWO

Innovative mountain bikes for children

Gone are the clunky kids bikes of yore. In 2018, Prevelo's Zulu One and Zulu Two lightweight trail bikes—engineered for kids ages 3 to 6—gained popularity among parents teaching their tykes to ride. This year, the Zulu series got a major upgrade with the patent-pending Balance-Tec system, which allows for switching between a balance bike and pedal bike in minutes—all without additional tools or removing parts of the frame. "It's the only system on the market where, when it's in pedal-bike configuration, there's no compromise to performance," says Prevelo co-founder Jacob Rheuban. The new models are also 15% lighter so beginners will feel comfortable tackling any trail.
—Derek Rose

ELVIE RISE

A 2-in-1 bouncer and bassinet

Unsafe sleep environments are the leading modifiable risk factor for sudden unexpected infant death (SUID), and Elvie's Rise Smart Bouncer and Bassinet helps parents address it with ease. The first 2-in-1 soothing bouncer that transitions into a bassinet without moving the baby, it meets ASTM safety requirements in both modes. It also features patented SootheLoop technology, which records and repeats preferred bounce cadences, putting parents in "complete control of how to soothe and calm their babies," says CEO Sarah O'Leary. Parents can also pair it with the Elvie Soothe & Sleep app for insight into their baby's sleep habits.
—Nina Derwin

BABY GEAR GROUP LIBRARIES

Renting baby supplies

Baby Gear Group's national network of rental libraries for baby stuff aims to render registries for expecting parents obsolete. Founded by mom Bo Zhao, Baby Gear Group uses a subscription-based rental model to create circularity throughout communities for baby gear that is quickly outgrown—including strollers, bassinets, highchairs, and more. "We have collectively kept 12 metric tons of gear and packaging out of landfills," says Zhao, "and saved families over $760,000." Baby Gear Group has locations in six cities throughout Pennsylvania and the Midwest, and in July launched a broader national expansion, targeting 1,000 branches across the U.S. **—Nina Derwin**

CANOPY BABY BATH TUB FILTER

3-in-1 bath perfector

This filter reduces chlorine, heavy metals, and skin-irritating contaminants, but it also handles two other jobs for parents concerned about their bathing baby's health and safety. The BPA-free silicone attachment acts as a bump-proof spout cover to protect sensitive noggins while offering a color-changing battery-free temperature indicator so parents have no doubt that, to paraphrase Goldilocks, the water will be just right. Canopy provides that assurance in more ways than one.
—Leslie Horn Peterson

EVENFLO REVOLVE180 LITEMAX NXT

A safe car seat that calms

Parents stuck in traffic with a crying infant know the helplessness of being unable to soothe them, yet not every distracting toy is safe for use in the car. Launched in January, Evenflo's Revolve180 LiteMax NXT Rotational Infant Car Seat is the first and only infant car seat with integrated lights and sounds designed to soothe babies. The 180-degree rotating seat meets or exceeds all applicable Federal Safety Standards and features low-stimulation light sequences, songs, and sounds—all customizable with the Evenflo app so parents can tailor "sensory experiences based on what's most beneficial for their child," says Sharon Ruggieri, Evenflo's senior director of product management. **—Nina Derwin**

COZYLA CALENDAR+ 2

Family planner

Mom's next girls' night, what's for dinner Tuesday, basketball practices, parent-teacher conferences, chores, and so much more: Keeping track of schedules in one family across different email clients and school communication platforms is a lot to juggle. Cozyla's solution for preventing dropped balls and mental overload is a wall-mountable touchscreen hub displaying all the details day by day, color-coded by household member. The second version of the device, which launched this year, includes an AI assistant enabling voice commands. The device can sync up to eight calendars on iOS, Android and Windows devices via Cozyla's own mobile-friendly app, and includes meal planning tools.
—Leslie Horn Peterson

K-ID

Online age assurance

In preparation for its ban of under-16s from social media going into effect in December, Australia in August approved k-ID as a vetted way for platforms to comply. Discord, Twitch, Hasbro, and others have already begun using it for advanced user age verification, and it also helps companies understand which product features, in-app ads, and data practices are allowed in over 200 jurisdictions so they can customize user experiences accordingly. With countries like the U.K. and Australia now holding platforms more responsible for protecting children online, clarity is vital for compliance. **—Jeremy Gantz**

U.S. CYBER TRUST MARK

A nutrition label for internet-connected devices

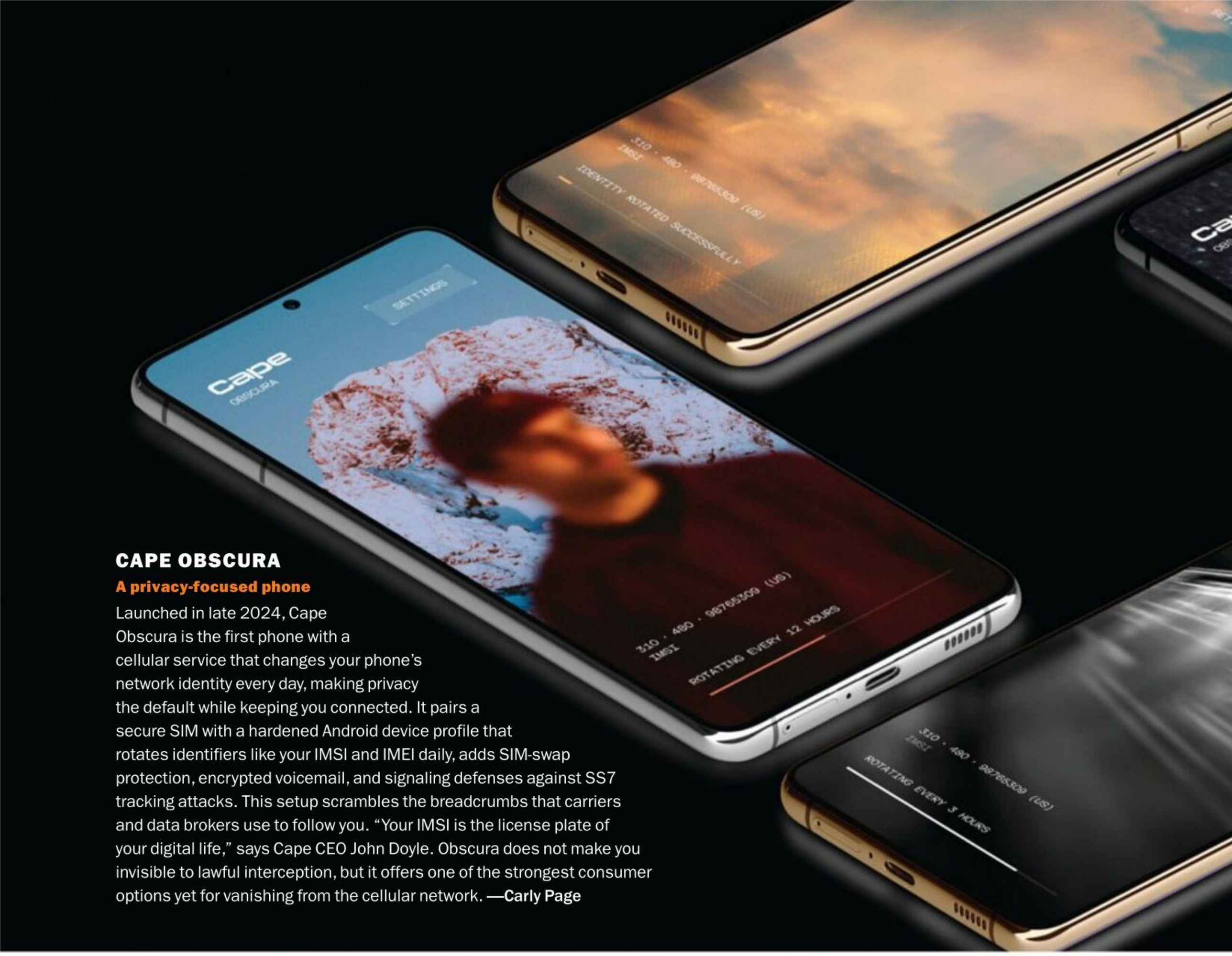
The U.S. Cyber Trust Mark is the government's bid to bring nutrition-label clarity to connected devices. Unveiled last year, devices can carry a QR-coded shield logo certifying they meet baseline cybersecurity standards set by the FCC and NIST, including consumer-friendly security controls and automatic updates. The label, when scanned, will tell customers security-related information about that specific product including a configuration manual. As of September, the project appeared to be on hold as the FCC had launched an investigation into the private company that vets the project, though experts say delays in implementing the cybersecurity solution puts Americans at risk. The FCC did not respond to requests for comment about the status of the program. **—Carly Page**

AI Deepfake Detection
Tap a portrait to enter the single fullscreen mode for a more accurate detection result.
Chance: 98%
Chance: 98%
No AI face swap detected
No AI face swap detected
OK

HONOR ON-DEVICE AI DEEPFAKE DETECTION

Better trust, built in

Shenzhen-based Honor's newest flagship phones (like the Magic 7 Pro) ship with a built-in deepfake detector. The tool scans video for the telltale signs, like broken frames or unnatural facial movements, on the device itself, which cuts lag and avoids sending data elsewhere. The result is a first-of-its-kind safeguard that "shifts the burden of detection from the user to the device, empowering everyone to navigate the complex AI era with confidence and security," says Honor vice president Jianfa Sun. The feature works within Honor's own calling apps and WeChat, WhatsApp, Messenger, and Botim, as well as in short-form video apps like Douyin (China's version of TikTok) and the streaming network Bilibili, according to the company. **—Carly Page**



CAPE OBSCURA

A privacy-focused phone

Launched in late 2024, Cape Obscura is the first phone with a cellular service that changes your phone's network identity every day, making privacy the default while keeping you connected. It pairs a secure SIM with a hardened Android device profile that rotates identifiers like your IMSI and IMEI daily, adds SIM-swap protection, encrypted voicemail, and signaling defenses against SS7 tracking attacks. This setup scrambles the breadcrumbs that carriers and data brokers use to follow you. "Your IMSI is the license plate of your digital life," says Cape CEO John Doyle. Obscura does not make you invisible to lawful interception, but it offers one of the strongest consumer options yet for vanishing from the cellular network. **—Carly Page**

Q-CTRL IRONSTONE OPAL

Quantum navigation

Every day, over 1,000 commercial flights are disrupted when military forces or bad actors block the satellite-based GPS signals pilots need to navigate. Australian startup Q-Ctrl created a highly accurate backup solution: a quantum navigation system that uses ultra-precise atomic sensors to deliver GPS-like accuracy without satellites. In flight tests this year, Ironstone Opal proved itself 50 times more accurate than conventional GPS backups, such as inertial navigation systems, with positioning accuracy down to four meters. In June, the company was awarded a joint DARPA contract with Lockheed Martin to develop its navigation tech. **—Joe Mullich**

Disclosure: Investors in Q-Ctrl include Salesforce, where TIME co-chair and owner Marc Benioff is CEO.

PRODUCTIVITY

LOGITECH SPOT

A simple conference room monitor

Hybrid offices waste space and energy because managers lack data on how rooms are really used. Logitech's Spot is a palm-sized puck that can stick to walls and sense when employees are in meeting rooms, by using millimeter-wave radar, temperature, CO_2, and particulate sensors. Spot runs for up to four years on a replaceable D-cell and its data stream feeds into Zoom, Microsoft, and other platforms, helping companies manage meetings and guiding real estate and HVAC decisions that could cut corporate carbon footprints. The company is rolling out the tech globally in the fourth quarter after beta tests. **—Chris Stokel-Walker**

ANYSPHERE CURSOR

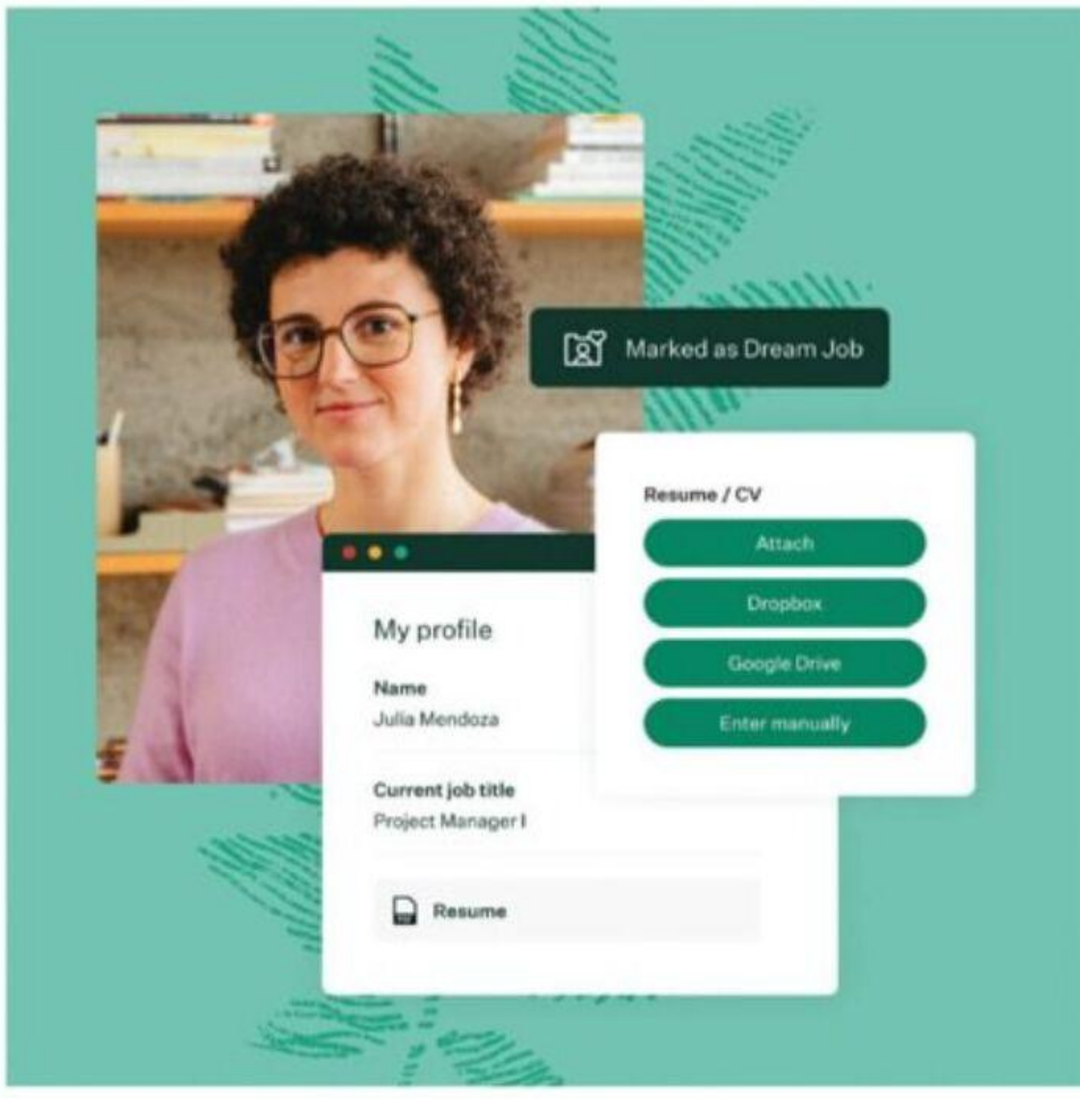
Vibe-coding tool

Cursor sits at the forefront of the vibe-coding revolution. Built atop open-source Microsoft code, Anysphere's AI-first coding platform allows users to write and edit code with conversational prompts. Using a mix of in-house AI models and ones from OpenAI, Anthropic, and more, Cursor can automate swathes of software development work. Developers have rapidly adopted the tool: According to Anysphere, over 50,000 enterprises—including over half of the *Fortune* 500—use it, generating over 100 million lines of code a day. In June, Anysphere raised $900 million in funding to "push the frontier of AI coding research." **—Tharin Pillay**

GREENHOUSE DREAM JOB

Honing the job search

The traditional job search can swamp recruiters and applicants alike. A new feature from hiring platform Greenhouse, called Dream Job, lets candidates select one role per month to tag with something akin to a Tinder super like, signaling high interest. "For job seekers, it means more control over their search," says CEO and co-founder Daniel Chait. "For recruiters, it's a clear way to see… candidates who genuinely want the role" as opposed to the influx of bots that now swarm job applications. Applicants who use it move through the job search process four times more successfully than those who don't, the company says. More than 6,500 companies already use the tool to filter applicants. **—Chris Stokel-Walker**



REMARKABLE PAPER PRO

A distraction-free tablet

Modern notetakers have to dodge distracting apps and alerts on their tablets. The Paper Pro from reMarkable introduces a focus-first canvas: an 11.8-inch e-ink screen that's capable of displaying 20,000 colors. The tablet is also just 5.1 millimeters thin. "It does make the engineering exceptionally difficult," says CEO Phil Hess. "Every tenth of a millimeter counts." The 1.16-lb. device boasts a two-week battery life. Hess hints that off-device AI integration is coming shortly: "If we're a thinking surface, then the level of integration we have with these thinking-assisted tools like AI… you can expect much more out of that," he says. **—Chris Stokel-Walker**

YOU.COM ARI

On-demand white papers

You.com's ARI, which stands for "advanced research & insights," may be the high-powered research consultant many companies have been waiting for. It generates spiffy reports in less than five minutes, on subjects ranging from how wildfire risks impact home insurance prices to quantum computing. Anyone can conduct market research "at a level that would have required a team of MBAs and consultants just a few years ago," CEO Richard Socher says. Under the hood is a large language model that analyzes over 400 sources, before spinning out prose with citations. ARI can also integrate internal data streams to support enterprise-specific insights. NIH and APCO are customers. **—Joe Mullich**

Disclosure: Investors in You.com include TIME owner and co-chair Marc Benioff.

SQUARE HANDHELD

Ultra-portable point-of-sale

As businesses become increasingly mobile, vendors want the flexibility to meet customers where they are—whether at the table, on the floor, or next to the fitting room. "The countertop is starting to move around," says Thomas Templeton, head of hardware at Block, the financial tech company that owns Square. This year, his team released Square Handheld, a portable point-of-sale device nearly as small as a smartphone—and at just .7 lb, slimmer and smaller than others on the market—that allows businesses to take orders, process merchandise, and run payments from one sleek hub. **—Gabriela Riccardi**

VVATER FARADY REACTOR

Zapping water contamination

Water treatment has long relied on four methods: filters, membranes, chemicals, and biological processes. VVater's Farady Reactor offers a new approach for removing contaminants including PFAS ("forever chemicals"), microplastics, and pharmaceutical residues: precise electrical pulses that destroy cells at the molecular level. The breakthrough came after years searching for the right combination of voltage, frequency, and harmonics, says co-founder and CEO Kevin Gast. VVater's low-energy electroporation system can be used anywhere from municipal facilities to disaster zones to residences (when whole-home units launch next year). **—Natasha Frost**

AMP ONE

Let AI sort your recycling

Even though 43% of Americans participate in recycling programs, more than three-quarters of their refuse ends up in the trash. "People are lazy—the recycling bin gets full and they put it in their garbage can," says Tim Stuart, CEO of AMP. "Our technology can extract that." In Portsmouth, Va., AMP is using AI-powered scanners to make sure the least amount of waste ends up in landfills. After garbage collection, organic material is sorted and sent for composting, while plastics and aluminum are sold to recyclers. This year, AMP is negotiating a 20-year partnership with Portsmouth's Southeastern Public Service Authority to process 500,000 tons of garbage a year. **—Micheline Maynard**

GREYPARROT ANALYZER

Recognizing brands in recycling

Only 9% of the more than 400 million metric tons of plastic produced each year is recycled. U.K.-based Greyparrot is looking to make recycling work better. The company's Analyzer product uses machine learning to help waste-management and recycling facilities better identify individual pieces of waste being processed so they can be sorted and recycled more effectively. Its DeepNest platform also uses AI to identify brands so manufacturers can track the recyclability and waste cycle of their products. The company recently partnered with Bollegraaf, one of the largest builders of recycling plants, to integrate its Analyzer AI systems to help automate recycling management. **—Kali Hays**

ROBOTICS

EUFYMAKE E1 UV PRINTER

Print textures at home

UV printing uses ultraviolet light to quickly dry special ink on materials like metal, wood, and acrylic. This once complicated process is no longer exclusive to industrial settings, thanks to the largest online crowdfunding campaign in history. EufyMake raised nearly $47 million to develop the world's first at-home UV printer, which is 90% smaller than traditional UV printers and can print 3D textures on over 300 materials. The product offers users millions of design templates to customize. "The E1 enables hobbyists, small business owners, and entrepreneurs to personalize everyday items or even launch side ventures," says Frank Zhu of Anker Innovations, which owns eufy. **—Jared Lindzon**

FIGURE 03

A household robot

The Figure 03 is a humanoid robot with a lofty goal. The company that makes it, Figure AI, wants to build a machine in the form of a human being, and put the bots to work across the global economy—including in homes. Upon its launch this October, the Figure 03 was capable of doing some domestic tasks like folding clothes and loading a dishwasher, but not without help (it can load the machine, but a human needs to start the wash and help if it drops something). Still, the company has embarked on a mass data collection drive to train the robots' Helix neural network to better complete more types of tasks. CEO Brett Adcock says robotics is on a similar curve to digital AI—suggesting that big capability jumps are coming. He aims to have the Figure 03 in select homes next year. **—Billy Perrigo**

HOVERAIR X1 PROMAX

Your personal videographer

The catch-22 of documenting life's moments is that you have to step out of those moments to capture them. Not with the HoverAir X1 Pro Max, an action camera that's small enough to slip in a pocket. The device flies alongside users as they carve down a ski slope or run across a ridgeline, shooting 8k video and tracking them using AI. Built-in sensors help avoid collisions, but it's also made from an aerospace-grade material that's flexible and tough enough to survive an inevitable crash. **—Ashley Mateo**

UNITREE R1

An agile humanoid robot

Most robots aren't the humanoid versions imagined in science fiction. One exception is the R1 from Unitree Robotics. Introduced in July with a starting price of just $5,900, this bipedal programmable robot caters to researchers, educators, and software developers testing AI and robotics projects. It weighs just 55 pounds, features built-in AI that supports voice recognition and image processing, and has 26 joints (humans have some 300). It can perform complex movements like boxing, running, and even cartwheeling. **—Matt Alderton**

SOCIAL IMPACT

DIVYA WASHING MACHINE

Reducing the global laundry burden

In 2018, Navjot Sawhney was volunteering in South India with Engineers Without Borders UK when he discovered that his neighbor, Divya, spent up to 20 hours per week hand-washing clothes. Sawhney founded The Washing Machine Project to serve the 5 billion people worldwide who wash their families' clothes by hand. "This burden falls disproportionately on women and girls, denying them opportunities to work, study, and rest," Sawhney says. His team developed the first flat-packable manual washing machine that's 75% faster and uses 50% less water than hand-washing, no electricity required. A 2024 partnership with the Whirlpool Foundation helped the company expand to 15 countries and send machines to refugee camps and hospitals in Gaza. **—Derek Rose**

SOLARSPELL

A digital library for half the world

Roughly half the world isn't online. The offline digital library SolarSPELL has more than 45,000 resources in its collection spanning education, agriculture, and health to bring what co-founder Laura Hosman, an associate professor at Arizona State University (ASU), calls "the best of the internet" to students, teachers, farmers, and healthcare workers in low-access areas like Micronesia, Rwanda, and Northeast Syria. The solar-powered device, created by a team at ASU, is made from recycled plastic with a computer board that generates its own offline WiFi hotspot so nearby devices can tap into the stored data. The initiative, which introduced an improved design in 2024, now reaches 420,000 learners across 15 countries, 92% of whom report feeling better prepared to do their jobs, Hosman says. **—Jessica Klein**

HEXAVALENT VACCINES

One jab to protect against six diseases

Earlier this year, Senegal and Mauritania became the first two low-income countries to distribute hexavalent vaccines. The six-in-one vaccine combines two vaccines currently supplied to low-income countries: a pentavalent vaccine that targets diphtheria, pertussis, tetanus, hepatitis B, and meningitis, as well as a separate polio vaccine. Because the hexavalent vaccine simplifies dosing—it involves three injections rather than five spread across two vaccines—more young children will gain protection against polio in particular, according to Gavi, the global health organization that covered the majority of the vaccine's costs in the two countries. Hexavalent vaccines have been in use in Europe and the U.S. for 25 and 13 years, respectively. **—Allana Akhtar**

THE GARBAGE CAFE

Incentives for recycling

To address pollution and food insecurity, the Indian city of Ambikapur created the Garbage Cafe. Customers drop off discarded plastic at a city sorting center, in exchange for free food vouchers they can redeem at an eatery run by local government staff, receiving a full meal for one kilogram of trash and breakfast items for half a kilogram. The city then sells the recycled material. The cafe is "a step towards a cleaner, sustainable future," says Ritu Sain, an administrative official who helped lead waste-reduction efforts. Since the cafe opened in 2019, other cities in India have adopted the model. **—Marina Koren**

JUSTIGUIDE RELO

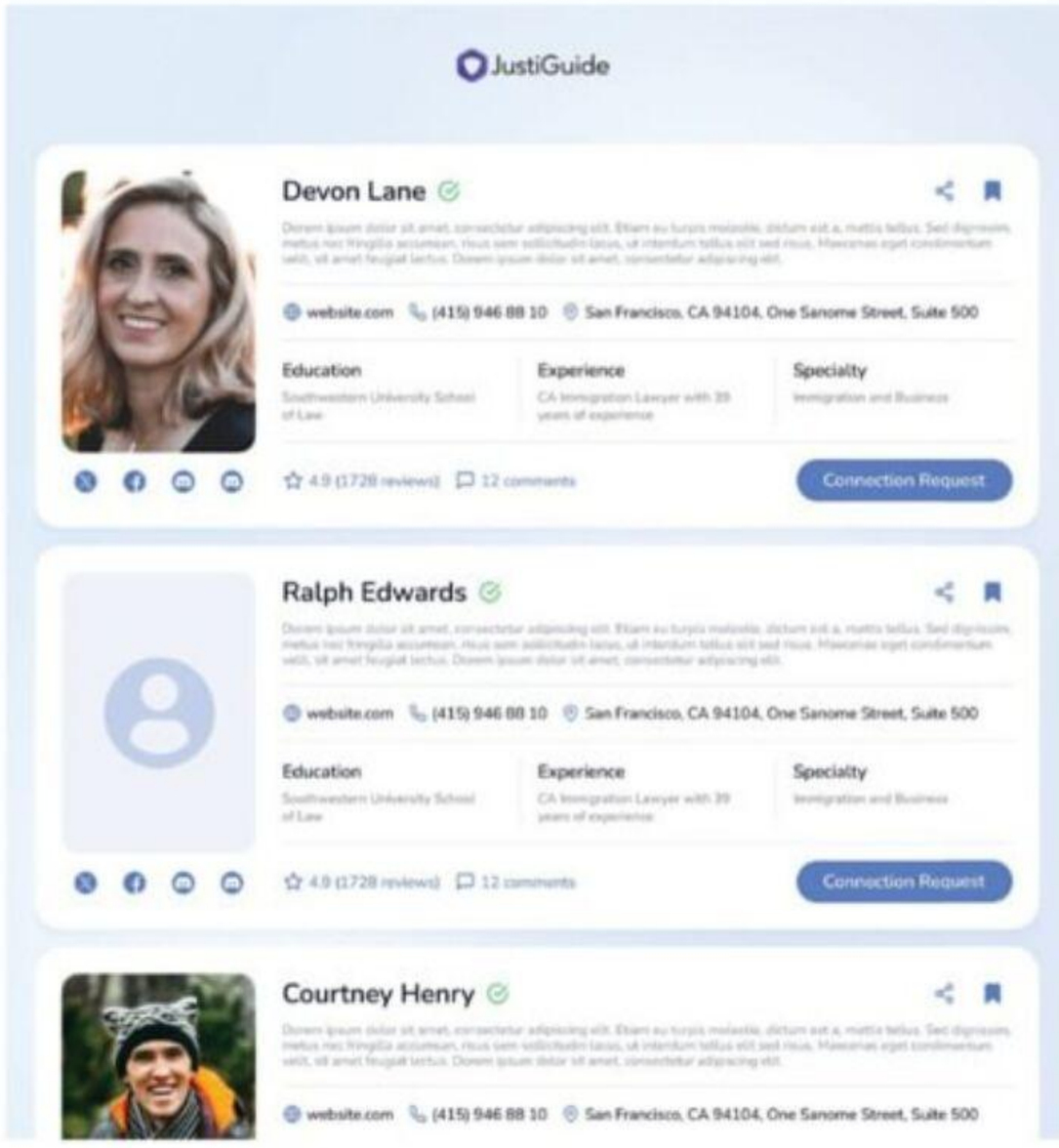
AI-powered immigration assistance

More than 51 million immigrants live in the United States, including 2.1 million temporary residents who are lawfully in the country for work or education. Securing visas, work permits, or asylum status, however, can be daunting. JustiGuide's ReLo platform helps immigrants navigate that process. Founded by Nigerian immigrant Bisi Obateru, its AI-powered multilingual dashboard helps users find and complete critical forms, connect with immigration consultants in real time, and access qualified immigration lawyers. "Immigration delays cost the U.S. economy $34 billion annually," says Obateru. "We're not just building software; we're creating pathways for global talent to contribute to American innovation." **—Matt Alderton**

WONDERFUL COPENHAGEN COPENPAY

Rewarding good deeds

Copenhagen is turning tourists into a force for good. Its tourism organization, Wonderful Copenhagen, rewards visitors for good behavior through its CopenPay program. Pick up trash, your boat rental is free; take public transit, get a free museum admission. This year, 100 local organizations offered rewards. "The goal is to make it easy and fun for tourists to…give something back," says marketing director Rikke Holm Petersen. The program had 5,000 participants during a four-week run in 2024; this past summer, it had 25,000 over nine. Since then, Berlin and Helsinki have started similar programs, and Petersen says more than 100 other cities have inquired about replicating the approach. **—Jared Lindzon**



FLASHFOOD 3.0

Cutting grocery costs

Up to 40% of the U.S. food supply goes to waste while approximately 18 million American families can't afford or access groceries. Flashfood aims to tackle both problems at once. With version 3.0 of its mobile app, launched in late 2024, shoppers can find flash deals on fresh meat, dairy, bakery items, and produce—often discounted up to 50%—that might otherwise be discarded by nearby supermarkets due to aesthetic flaws or looming expiration dates. Flashfood, which estimates it has saved shoppers more than $355 million on food to date, launched a pilot partnership in July with Kroger, one of the largest grocery chains in the U.S. **—Matt Alderton**

SOCIAL IMPACT

UNIMMAP MULTIPLE MICRONUTRIENT SUPPLEMENTS (MMS)

Prenatal health for all

Women in the West have access to a slew of premium prenatal supplements, while pregnant people in poorer countries typically receive two-nutrient tablets, if any, says Spencer Kirk of Kirk Humanitarian. The nonprofit has worked closely with manufacturers to bring the price of MMS—which was originally developed by the WHO, UNICEF, and others, and contains 15 essential nutrients—in line with the iron-and-folic-acid-only tablets currently provided to humanitarian agencies. With evidence clear that MMS helps prevent births of small newborns at highest risk for infant mortality, more than 30 countries are now introducing or scaling up the use of MMS in their healthcare systems. **—Allana Akhtar**

THRONE

Bathroom as a service

The U.S. has a public bathroom problem: There aren't nearly enough to meet demand. Throne Labs set out to "rethink restrooms" and reduce costs, and came up with Throne, a pop-up smart bathroom. To access the ADA-compliant pods for free, a user must have a unique ID connected to a mobile device or access card; make a mess too many times and you could lose Throne privileges permanently. (Built-in sensors and other users can flag problems.) The approach is winning over a growing number of city governments. Nearly 100 Thrones will be installed by the end of 2025, including in Los Angeles, Detroit, and Washington D.C. **—Jeremy Gantz**

CHARIOT DAFPAY

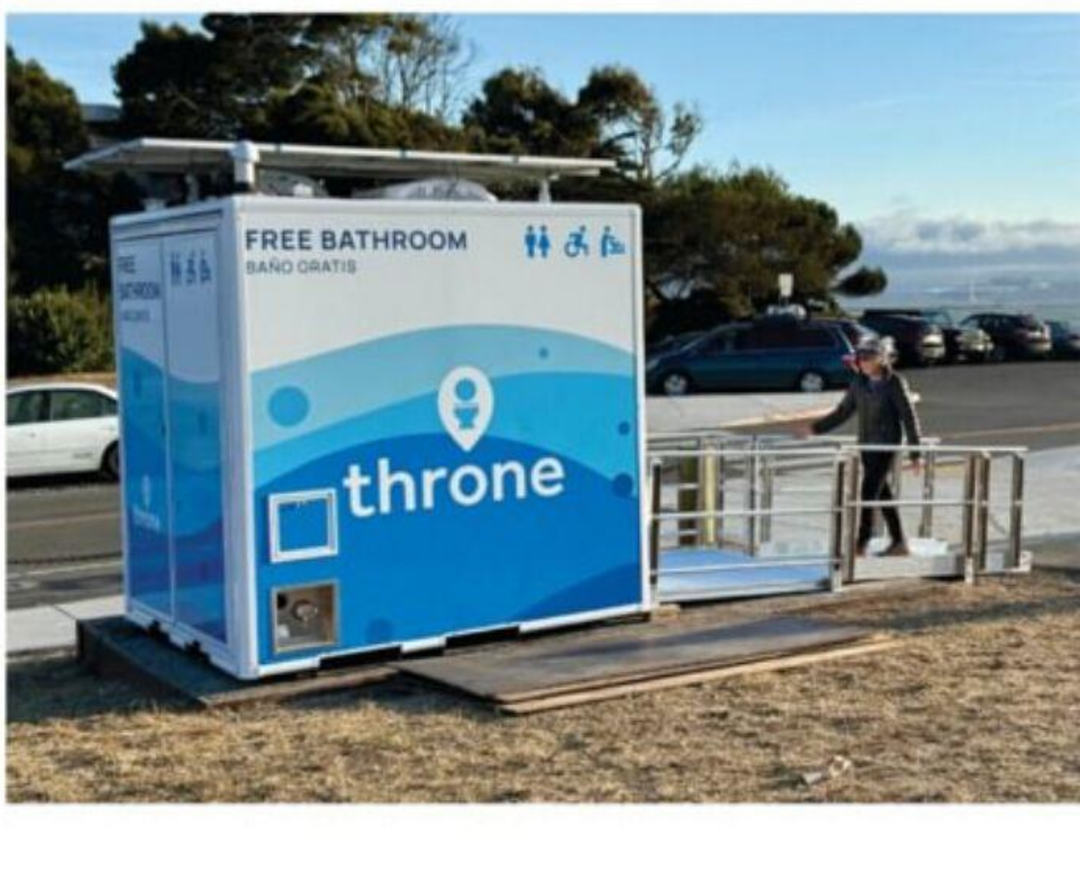
Easier donations

DAFpay makes it easier to donate to a good cause from a donor-advised fund (DAF), a tax-advantaged charitable investment account that has been growing in popularity for years. By integrating DAFpay into their donation forms (next to Venmo, Apple Pay, and other options), nonprofits turn what had been an onerous online experience with multiple redirects into a three-click process. The friction-free option has proved "transformative" for many charities, says Mitch Stein, Chariot's head of strategy. Blood Cancer United raised $3 million through DAFpay, a big uptick in DAF donations, since installing it in January. More than 100,000 nonprofits now use the service. **—Jeremy Gantz**

MDCF-2

A vital malnutrition supplement

Severe childhood malnutrition causes long-term chronic health conditions, partly because of maldevelopment of the gut microbiome. So Tahmeed Ahmed from Bangladesh's ICDDR and Jeffrey Gordon of Washington University in St. Louis formulated a therapeutic food—microbiota-directed complementary food No. 2 (MDCF-2)—to encourage production of specific intestinal bacteria that break down food into molecules linked to bone growth and brain development. Clinical trials have shown that malnourished children eating MDCF-2 see bigger weight and height improvements, and an October 2024 study identified a key growth-inducing enzyme the therapy appears to stimulate. **—Allana Akhtar**



RALLY ORBITAL MASSAGER

An oscillating massage gun

When a bizarre DIY wellness hack—using car buffers to treat muscle pain—eased his dad's myalgia, Rally co-founder John Benjamin envisioned a new recovery tool. "The best game in town was a percussive therapy gun," he says. "But Olympic athletes were lugging car buffers into training rooms." Partnering with sports doctors, pro trainers, and the engineering firm Doris Dev, Benjamin secured nine patents to refine the idea. The result: a sleek device combining circular oscillation with deep percussion for a powerful—and quiet—massage. **—Chris Norris**

LOUISVILLE SLUGGER PRO PRIME TPD1

Reengineering home runs

The New York Yankees hit a record-tying 15 home runs in their three first games of the 2025 season, with some players using Louisville Sluggers' odd-looking Torpedo Prime bats, which move the fat sweet spot closer to the handle, where data shows players are more likely to strike the ball. Now wood bat sales at Hillerich & Bradbury, maker of Louisville Sluggers, are up some 20% year-over-year. "Really good players have had fantastic success with it," says Bobby Hillerich, the company's VP of manufacturing. Former Yankees analyst Aaron Leanhardt, an MIT-trained physicist, is credited with inventing the torpedo.
—Sean Gregory

HYPERICE AND NIKE HYPERBOOT

Recovery on the go

Your feet and ankles act as your body's suspension system—the foundation of every step, stride, or jump. Hyperice's Normatec leg sleeves, which provides compression to increase blood flow, have gained popularity as a muscle recovery tool, but are bulky when worn, immbolizing the wearer. Founder Anthony Katz set about redesigning all the components of the leg sleeves into what's essentially a puffy high-top sneaker. The new Hyperboot from Hyperice x Nike fuses compression and heat to loosen the fluid lining ankle and foot tissues so you can move more easily and reduce the risk of injury. **—Ashley Mateo**

SPORTS & FITNESS

WAHOO KICKR RUN

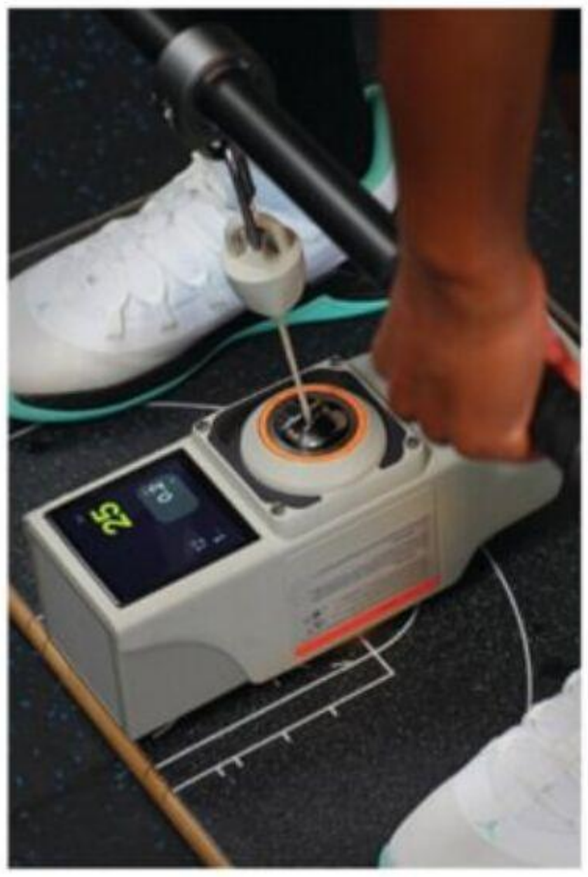
A better treadmill

What if your treadmill let you set the pace—not with buttons, but with your body? "We had some folks tell us this wasn't possible, and that was all the challenge we needed," says Wahoo product manager Joe Justice. The KICKR RUN's RunFree mode uses sensor technology to speed up or slow down based on your position, and the hoodless deck ensures you'll never clip your feet. With the ability to tilt forward and backward side to side to simulate real terrain, it's the kind of innovation that could finally wipe the term "dreadmill" from runners' vocabulary. **—Ashley Mateo**

SEQUEL SPIRAL TAMPON

Redesigning menstrual care

Tampons haven't evolved much in nearly a century. San Francisco-based startup Sequel set out to change that. Founded in 2019 by Stanford graduates and high-level athletes Amanda Calabrese and Greta Meyer, Sequel has secured 31 patents for its FDA-cleared spiral tampon, which replaces straight grooves with a helical design that absorbs liquid more evenly and reduces leaks—a common problem, especially during high activity. It's also made with plant-based viscose fibers and a BPA-free applicator. The company has inked women's sports partnerships, including with the WNBA's Indiana Fever, since the Spiral hit the market last year. **—Aimee Groth**



BEYOND POWER VOLTRA I

Portable weight training

The Voltra I shrinks a weight room into a portable shoebox-sized device, making strength training accessible without a gym. Once mounted to a squat rack, wall, or other sturdy anchor point, an internal motor can generate up to 200 lbs. of resistance through an 8.5-ft. cable (accessories including handles, bars, and harnesses are available). An LCD touchscreen lets users toggle between different strength-training modes, to imitate using resistance bands or traditional weights. The battery-powered smart device can adjust in real-time to make each rep harder or easier based on how much force you use. **—Ashley Mateo**

ACEMATE TENNIS ROBOT

Match-ready

Tennis is a sport that can't be played alone, unless you roll this robot onto the court with you. Acemate's rechargeable machine catches balls in its net and shoots one back, with full-court coverage up to about 16 feet per second on all surface types. Users can set the robot's returning speed and height via a companion phone app, which also offers post-play feedback detailing a player's shot placements, average speeds, and other data points. Acemate says the robot can serve balls up to 80 mph. Just like humans, it can't return every shot; but 90% is pretty good. **—Leslie Horn Peterson**

PUMA FAST-R NITRO ELITE 3

A faster racing shoe

After sending two marathoners to the 2024 Olympics, Puma dropped the Fast-R 3 in April to show just how serious the brand is about speed. The race day shoe uses a new foam compound, restructured carbon plate, and its lightest build yet to boost running economy (how efficiently the body uses energy to maintain a given pace) by an average of 3% in lab tests—the most of any in the "super shoe" genre. "In major marathons, over a third of runners wearing Fast-R 3 smashed their personal records by over three minutes," says Romain Girard, PUMA VP Innovation. **—Ashley Mateo**

FLITEDECK

Smart cockpit for cyclists

Serious cyclists shell out serious money for aerodynamic bikes—and then often end up cluttering the handlebars with bike computers and accessories. Flitedeck, which Germany-based Flite describes as a "smart cockpit," is a first-of-its-kind handlebar that integrates a slew of functions in one slick package. A waterproof touchscreen offers navigation, ride, and performance info, along with safety system features including a built-in front light and bell. The carbon-fiber product, which Flite says is compatible with 99% of bike stems, connects via Wi-Fi, Bluetooth, and 5G eSIM to various apps and sensors, such as power meters. **—Jeremy Gantz**

OAKLEY HYPERGRIP

Non-slip sport sunnies

Most sport sunglasses rest on just your nose and ears, front-loading the weight in a way that makes them prone to bounce. "The challenge was to create more contact with the head so we can distribute that load more evenly," says Oakley vice president of design Nic Garfias. The brand's new HyperGrip technology does that job. In the Stunt Devil model, a malleable duck foot increases the stem's surface area; in the Stunt Wing model, a violin bow-inspired frame and silicone straps mold to your head without pressure or pinching. Tested on ultramarathoners, these glasses stay locked in.
—Ashley Mateo

SPALDING TF DNA

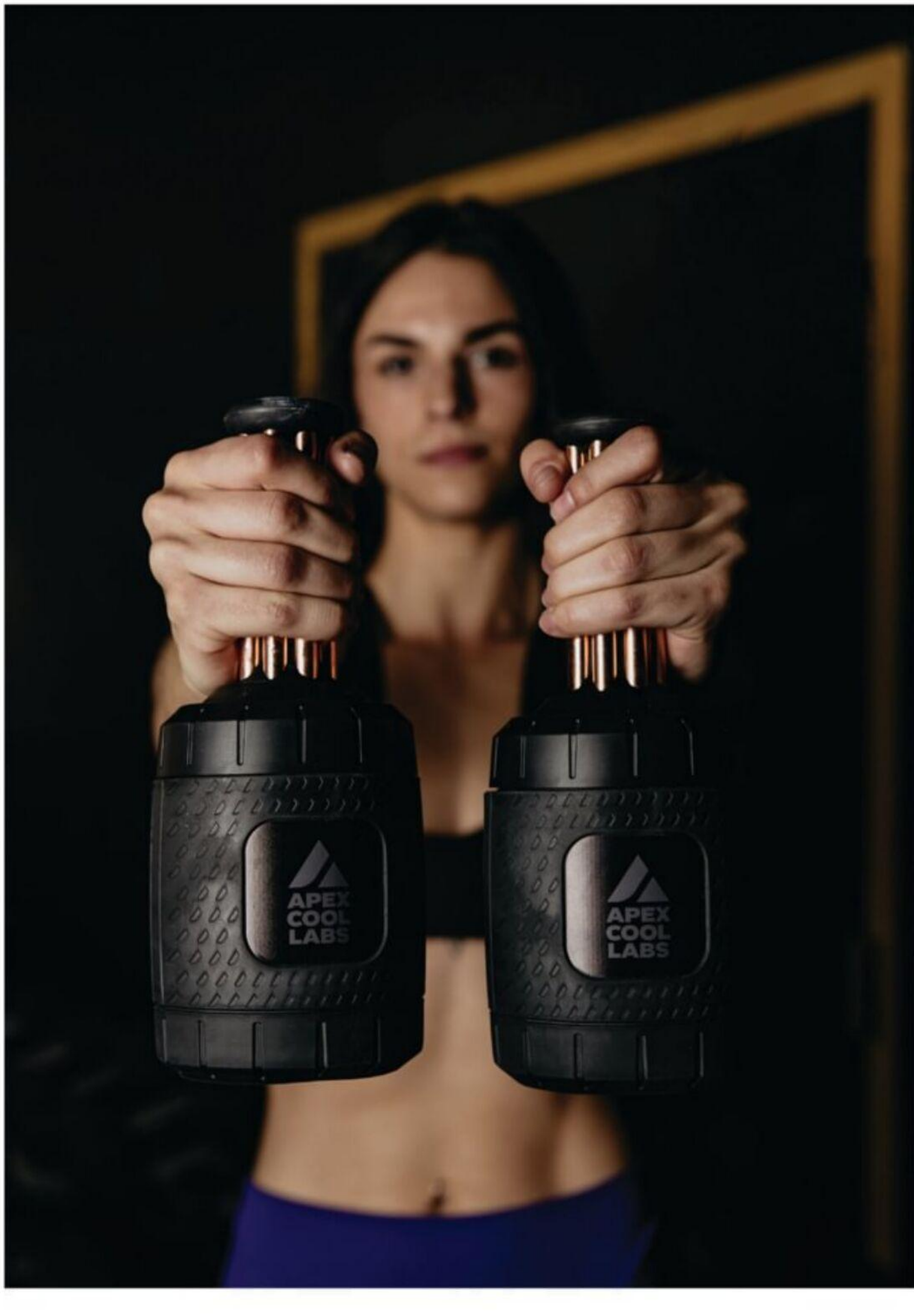
Data-driven dribbles

To analyze players' performance at a granular level, the NBA uses a system called Noah that outfits courts with cameras and sensors. The creators of the Spalding TF DNA harnessed this ability inside a basketball. Extremely lightweight gyroscopes and accelerometers in the balls' bladders tell users their shooting release angles, speeds, spin rates, and other pro-level metrics through a smartphone app and subscription that also features NBA players' drills. "We're seeing players improve 25% across all metrics on their shots…within 12 weeks of using the ball," says Erik Anderson, CEO of SIQ, which partnered with Spalding on the TF DNA. **—Jessica Klein**

CANNONDALE SYNAPSE CARBON 2 SMARTSENSE

In-frame cycling innovation

Battery-powered tech and bicycles have been converging for years. This sixth-generation of Cannondale's Synapse, designed for long-distance riding, is a big step forward. Outfitted with the company's SmartSense system, it's the first road bike that powers an integrated system of lights, radar, and wireless electronic shifting with a single battery "hidden in the downtube," says Chief Marketing Officer Will Ockelton. That battery can also charge a phone, while the bike's "StashPort" downtube storage compartment can hold a spare tube and tools. It is even more aerodynamic than its predecessors. **—Jeremy Gantz**



APEX COOL LABS THE NARWHALS

A literal cool down

Stanford biologists have called palm cooling "better than steroids" for its ability to lower core temperature and ease muscle fatigue among athletes. In 2024, Apex Cool Labs packaged that science into The Narwhals. The handheld devices use copper tubes to draw heat from your palms, one of the few areas where blood vessels connect directly between arteries and veins. The instant chill lets users do more sets in the weight room or push harder in the final reps of a cardio workout, says co-founder Ariel Paul. NBA and NHL teams are already using them to stay cool on the sidelines. **—Ashley Mateo**

SUSTAINABILITY

CANDELA P-12 SHUTTLE

An electric commuter ferry

Most ferries still run on diesel or gasoline engines. Last November, Swedish boat maker Candela launched the P-12, an electric hydrofoil vessel, and began a pilot commuter ferry service in Stockholm. The 30-passenger boat uses computer-controlled wings to lift it above the water, reducing drag and allowing for speeds of up to 25 knots—twice as fast as Stockholm's diesel-powered ferries—and its electric motors have a range of 40 nautical miles on one charge. With the pilot run completed in August, Candela plans to deploy the P-12 in the U.S. on Lake Tahoe next year, and says it has received orders from Saudi Arabia, New Zealand, and Berlin. **—Micheline Maynard**

MOEN HANDHELD

A more sustainable shower

Research suggests that up to 30% of shower water is wasted while it's warming up. "We've all had mornings where we turned on the cold shower and lost track of time waiting for the water to turn hot," says Caroline Silva, Moen's senior category manager of custom showering. "This is an unnecessary depletion of precious resources." The company's aptly named Handheld That Saves Hot Water, launched in March, reduces water to a trickle while it's heating, then restores full flow once the temperature reaches 95° F. It also meets the EPA's WaterSense criteria, meaning it uses at least 20% less water than standard models. **—Matt Alderton**

LIQUIDONATE

Turning brand waste into charity

Consumer returns often create waste, but not when they're redirected to those who need them. "Returns are the best kept secret in retail," says Disney Petit, the founder and CEO of LiquiDonate, which helps 150 brands send their excess inventory—returns and overstocked items—to more than 4,000 charities and nonprofits that need it. The idea came during the pandemic, when Petit began photographing personal items to give away; by 2023, she'd launched LiquiDonate, with Restoration Hardware as its first retail partner. Now she estimates the company has kept over 12.3 million pounds of goods—from clothing to furniture to nonperishable food—from landfills. **—Micheline Maynard**

GLACIER RECYCLING ROBOTS

AI-powered sorters

The U.S. recycles just 32% of its waste, while the rest is mainly landfilled. Part of the problem is that workers and outdated machinery that sort bottles, cans, paper, and plastic at recycling facilities miss a lot of recyclables, leading to waste. Glacier's AI-powered robot can identify more than 30 recyclable materials, and is being tested on bio-plastics. One robot can prevent some 10 million items from going to a landfill each year, says Rebecca Hu-Thrams, who co-founded Glacier with Areeb Malik. The company is partnering with recycling companies, and consumer brands like Amazon to develop more recyclable packaging designs. **—Catherine Boudreau**

SUSTAINABILITY

JACKERY SOLAR ROOF

Power to the design-minded

Big black slabs on your roof—solar panels—typically don't match your home's aesthetic. The curved solar tiles of Jackery's new Solar Roof are the first on the market designed to blend into a neighborhood dotted with Mediterranean-style terracotta roofs. Homeowners can choose from terracotta color or obsidian, and the curved tiles mean that for some homeowners, "solar no longer clashes with design codes or HOA restrictions," says CEO Jack Sun. Each 10-pound panel is built to withstand high winds, hail, and extreme temperatures, while boasting an industry-leading solar cell conversion rate (how much sunlight is turned into energy) of over 25%. **—Jared Lindzon**

AZURE PRINTED HOMES

Housing from recycled plastic

From natural disasters to homelessness, there are myriad reasons a person or family might need a new home, fast. "We shouldn't give up on the American dream," says property developer Gene Eidelman, an immigrant from Ukraine, "and part of it is home ownership." Eidelman launched Azure Printed Homes in 2022, 3-D printing entire structures from recycled plastic material in just a few weeks. From studio-sized huts and homes on wheels to stand-alone houses, prices start at $19,900. Azure has constructed about 100 homes so far and will open a second factory in Denver to reach 200 by next year. **—Micheline Maynard**

WATTTIME AUTOMATED EMISSIONS REDUCTION (AER)

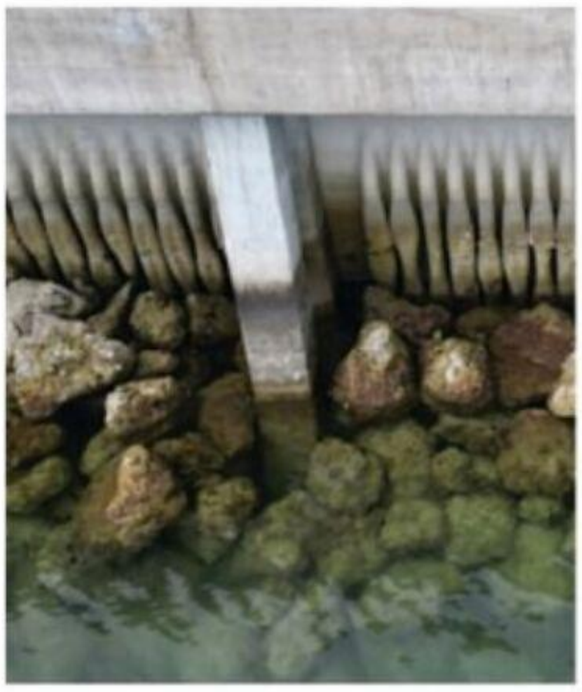
Automating cleaner energy use

As solar and wind power has become common worldwide, many assume their energy flows directly to the electric power grid. In reality, utilities often bypass renewable energy to maximize the use of their power plants. WattTime's Automated Emissions Reduction system tracks real-time marginal emissions data to identify when the grid's electricity is cleanest so connected devices, like EVs or smart thermostats, can automatically prioritize running during low-emission periods. WattTime now monitors power use in 210 countries. "You can change what time you use energy, and you can change where," says CEO Gavin McCormick. In September 2024, the system surpassed 1 billion free users. **—Micheline Maynard**

BUDDERFLY VIRTUAL POWER PLANT

Reducing energy costs

It's easy to think of an electric grid as a monolith. The reality is, a grid represents a dense system of individual users and businesses, each of which has their own energy needs. A typical restaurant uses more energy than an office building. A grocery store uses more energy than a restaurant. But small, local businesses previously lacked a resource to participate in large-scale energy programs. Budderfly's virtual power plants, launched officially in 2025, let small-to-midsize businesses install the company's distributed energy resources—like solar panels or electric car chargers—which Budderfly then manages remotely. The grid gains flexibility between different businesses' peak use times, and energy costs go down. **—Kali Hays**



KIND DESIGNS LIVING SEAWALLS

Fighting flooding

Anya Freeman loved living in Miami Beach—except for the frequent flooding. So she founded Kind Designs, which puts a thoughtful spin on seawalls, structures that have protected vulnerable shorelines for decades. The company's Living Seawalls are 3D-printed from a non-toxic concrete mixture, and can be custom shaped to suit local flora and fauna: mangrove roots in Miami, barnacles and seagrass in New York. Their richly textured surfaces dissipate waves while providing habitats for sea life. Since October 2024, Kind Designs has installed nine Living Seawalls across the Miami/Fort Lauderdale area, and won grants from the U.S. Navy and Air Force to fortify their coastal bases. **—Marina Koren**

SAMSARA ECO EOSECO

Recycled athleisure

As much as 23 million metric tons of plastic waste is generated each year, polluting water systems and harming wildlife. Only 10% is recycled. Samsara Eco uses AI-designed enzymes to break down plastic fibers, returning them to their original form, so they can be reused. In December 2024, the company announced it had created the first enzyme that can recycle a type of nylon frequently used in fashion and cars. It's partnered with Lululemon to create new garments from recycled polyester and nylon fibers. The company opened a facility outside Canberra in September, and plans a second in Asia. **—Micheline Maynard**

LOOP LIVING COCOON

An all-natural casket

The Loop Living Cocoon, a biodegradable moss-lined coffin made from mushrooms and hemp fibers, is designed to "actively enrich nature, even after we're gone," says CEO and co-founder Bob Hendrikx. It's a sustainable approach to traditional burials—which can leach pollutants into soil and groundwater—for the 68% of Americans interested in having green funerals. Since the Netherlands-based company launched in 2020, there have been about 2,500 burials using its caskets, including the first in the U.S. this summer, in Maine. "It's not just about minimizing harm, it's about turning your last act into a gift to the earth," Hendrikx says. **—Erica Sweeney**

PIXICADE

Making drawings come alive

This toy turns drawings into video games, sparking creativity while bridging the analog and digital worlds. Kids draw their video game vision with markers, take and upload photos, and the Pixicade app creates the playable game (no coding necessary). The goal was to help reverse the decline in creative thinking that co-creator Alysha Hortsman, a high-school teacher and illustrator, has seen among students in recent years. Originally intended for classroom use, Pixicade sold out soon after debuting in October 2024. "The excitement, confidence and sense of pride kids feel…is real," says her husband and co-creator Martin Hortsman.
—Leslie Horn Peterson

BAMBU LAB CYBERBRICK

3D-printable toys

CyberBrick, from 3D printing company Bambu Lab's MakerWorld ecosystem, has released kits that include modular and 3D-printable parts to build miniature, remote-controlled toys (printers not included). Encouraging STEM learning for beginners, CyberBrick parts require no soldering, wiring, or coding know-how to assemble. Advanced users can code to customize templates or create new designs, from R2-D2 to swimming rubber duckies, to share with the enthusiastic community. CyberBrick "revolution[izes] the entire supply chain," Bambu Lab founder and CEO Ye Tao said in a press release, adding that customers can turn their 3D printers into personal toy factories.
—Jessica Klein

BIGGEST LITTLE B IS FOR BALL

The everything toy

B is for Ball is the toy for every parent who swore up and down they wouldn't let baby gear take over their home. The colorful, two-piece silicone ball starts as a teether for babies, and as they grow, it becomes a bath toy, a stacking toy, and a toy for open-ended active and imaginative play for older kids. The sky is the limit, and that's exactly the point. "I wanted to create a universal and timeless tool for discovery and learning—and do it in a way that solves parents' frustrations and respects our environment," says founder Stephanie Fu. Bonus: It can go in the dishwasher. **—Leslie Horn Peterson**

CHOMPSHOP CHOMPSAW

Kid-safe power tool

It's a tale as old as time: A kid gets a shiny, expensive new toy and then wants to play with the cardboard it came in. But while accessible, cardboard has one drawback, says Chompshop co-founder and CEO Kausi Raman. It is "really hard for kids to cut. Most of the time they need an adult's help," she says. Her solution: ChompSaw, which looks like a mini tablesaw, but with no blade or spinning parts that could snag hair. Instead, it works like a rapid-fire hole puncher; little fingers can't fit in the cutting area's opening. The plug-in device also cuts paper, fabric, and craft foam. **—Leslie Horn Peterson**

CLIXO

Open-ended play

Toymaker Assaf Eshet wanted to create an open-ended, expressive building system that is "truly reflective of how kids think." The result is Clixo, which Eshet says is inspired by the intricacy of origami, while being as accessible as a set of building blocks. Children can turn the light, flexible magnetic pieces into animals, jewelry, cars—whatever their imaginations desire. "Parents often tell us that while their kids are busy creating wild creatures or inventive gadgets," Eshet says, "they're also quietly practicing problem-solving, spatial reasoning, and building creative confidence." He hopes parents join the fun. **—Leslie Horn Peterson**

MATTEL BARBIE YOU CREATE

Customize an iconic doll

Adults are actually fueling growth in the toy market by buying for themselves, and Mattel says a third of grown-ups who buy Barbies aren't just collecting: they're customizing. "Over the years we've seen an active community of fans and collectors bring their own creativity to Barbie," says Kim Culmone, SVP and global head of doll design. So in March the toymaker launched You Create Barbie, a $100 kit that comes with three interchangeable heads and three articulated bodies, plus wigs, clothing, and accessories to let enthusiasts get creative. And although marketed to adults, the dolls are just as hardy and ready for kid play as ever.
—Leslie Horn Peterson

LIBERLIVE C1

A stringless smart guitar

So many looking to sing and play guitar hit roadblocks when calloused fingers and complex chords get in the way. The C1 makes it easier to play a song by swapping steel strings for two paddles and a pressure-sensitive neck pad. You touch for a chord and flick to strum. A companion app shows chord prompts, while the hinged body folds down small enough to tuck into a backpack. The C1 has six hours of battery life and a headphone jack for silent practice. Tang's team is already prototyping sister instruments to make music "casual and playful." **—Chris Stokel-Walker**

TRANSPORTATION

LIMEGLIDER

Zip around town in comfort

When Lime set out to make a new product to add to its fleets of e-bikes and scooters, it turned to customers for ideas. Feedback pointed to something "bike-like with a big, cushy, motorcycle-style seat," and a throttle, rather than pedals, according to Lime's president, Joe Kraus. The result, the LimeGlider, is a micromobility device that looks "like an e-bike and a moped had a baby." The Glider has 20-inch wheels and a low step-through height, so customers in skirts can ride comfortably. The gliders rolled out in cities around the world this summer. **—Craig Wilson**

VERGE TS PRO

A long-range electric motorcycle

A hubless rear wheel defines Verge's TS Pro electric motorcycle. Its rim-integrated motor eliminates chains, gears, and oils, freeing space for a powerful battery; since its launch last year, the TS Pro set a Guinness World Record, completing a 193-mile ride on a single charge. When the motor is in the rim, there's no "delay or latency when controlling the traction," says CEO Tuomo Lehtimäki, whose experience in China's spare-parts trade inspired him to build something cleaner. With over-the-air updates and Tesla-style remote diagnostics, the bike continues to improve itself long after it leaves the factory. **—Aimee Groth**

QTPIE AUTOMATED ROAD TEST SYSTEM (ARTS)

A robot driving test proctor

QTPIE turns the driving exam into a phone on the dashboard: Its dual cameras and sensors watch road and driver, scoring speed, head-turns, and lane discipline while an AI voice guides each maneuver and issues a final evaluation. After 300 pilot runs with Virginia's Department of Motor Vehicles, the Automated Road Test System will launch in 10 of the busiest DMV centers, expand to 30 more by mid-2026, and go statewide in 2027. Next up could be using the same system for insurance companies. "We want to be the ubiquitous driving evaluation standard," says CEO and founder Ravi Teja Chadalavada. **—Chris Stokel-Walker**

BYD SEAGULL

An affordable EV

If you're American, you'd be forgiven if you've never heard of Chinese automaker BYD. But in much of the world, the electric vehicle company is a household name. The BYD Seagull (branded as the Dolphin Surf in some markets) is the company's star and cheapest offering, at RMB 73,800 (about $10,300) at launch. It's a compact hatchback, the simplest version of which has a 30kWh battery, 55kW motor, a range of 190 miles, and a top speed of 81 mph. Does the world want a tiny electric car? It seems so. In June, the one millionth Seagull rolled off the production line. It launched in 15 European markets earlier this year.
—Craig Wilson

WAYMO DRIVER

A safer self-driving car

More than 40,000 Americans die in traffic accidents every year, with most caused by human error. Waymo, the autonomous ride-hailing service that launched in 2009, says its AI-powered Waymo Driver could be the solution. Waymo's more than 2,000 cars have completed more than 10 million trips in San Francisco, Phoenix, Los Angeles, Austin, and Atlanta, with five times fewer injury-causing crashes than human drivers and zero human fatalities caused by its vehicles, according to the company. Waymo plans to expand to Miami, Dallas, Nashville, and Washington, D.C. in 2026. "We've built the safest, most advanced AI system operating in the physical world at scale," says Waymo co-CEO Dmitri Dolgov.
—Matt Alderton

VOLVO MULTI-ADAPTIVE SAFETY BELT

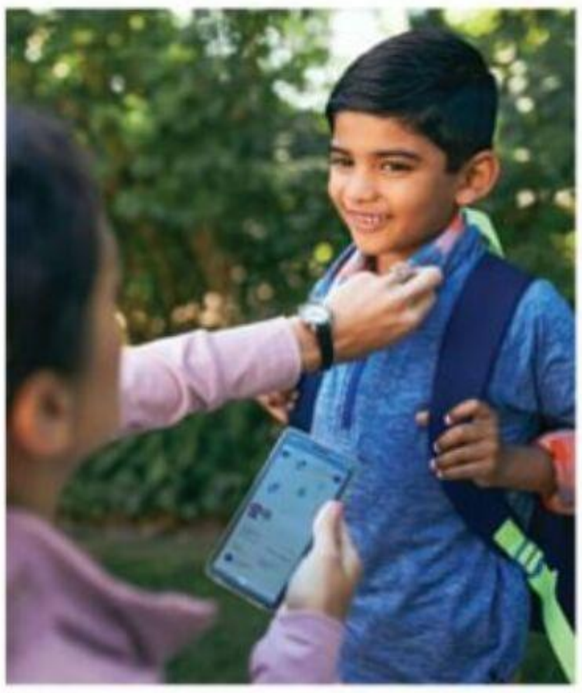
Smart seat belt

In 1959, Volvo engineer Nils Bohlin patented the now-ubiquitous three-point safety belt. This year his company built on that legacy. Its new adaptive restraint system customizes protection (e.g. by adjusting the amount of give in the belt) using data from interior and exterior sensors that monitor the wearer's height, weight, and sitting position, as well as the speed and direction of any crash. The safety belt will debut in the electric 2026 Volvo EX60, and will get more protective as the company collects real-world driving data. "We can update its performance through over-the-air updates," Volvo's Thomas McIntyer Schultz says.
—Leslie Horn Peterson

SAVERONE

Blocking driver distractions

Distracted driving kills over 3,200 Americans annually, but Israeli startup SaverOne has a way to stop drivers from reaching for their phones. The company's sensor-equipped system installed in a car or truck automatically detects the driver's device and blocks access to distracting apps when the car is moving, while preserving GPS. And the system can't be overridden. "Distracted driving isn't about bad drivers; it's about human nature colliding with technology designed to steal our focus," says SaverOne CEO Ori Gilboa. The technology has been deployed by commercial fleets including for European construction company CEMEX and MDM Express, a U.S. FedEx contractor. **—Joe Mullich**



FIRST STUDENT HALO

Smarter school buses

School buses shuttle more than 26 million American kids annually. Aiming to increase their reliability and safety, school transportation giant First Student launched Halo, a technology platform designed for school buses, in February. With hardware upgrades—including tablets, cameras, sensors, and Wi-Fi—Halo enables adaptive routing, GPS tracking, and real-time updates for parents and staff, AI-powered telematics for avoiding hazards, and predictive analytics for anticipating maintenance needs. This fall, the platform rolled out in 46,000 vehicles. **—Matt Alderton**

BMW IX3

Next-gen electric SUV

The German luxury automaker spent years and more than $11 billion—its largest single investment ever—to develop "Neue Klasse," its next-generation vehicle architecture. Unveiled in September as the first new class member, the electric iX3 SUV has a 400-mile range and charging speeds that deliver 175 miles of range in just 10 minutes, thanks to BMW's newly redesigned battery system. With 40 models planned for launch by 2027 on the Neue Klasse platform, which features what BMW calls a new "digital nervous system" involving four computers that can receive over-the-air updates, the iX3 kicks off a new chapter for the 109-year-old company. **—Jared Lindzon**

MUBEA U-MOBILITY ECARGOBIKE

Last-mile workhorse

The future of last-mile delivery in cities may run on pedal power. This year Amazon rolled out a fleet of Mubea e-cargobikes—which look like tiny trucks and travel on bike paths—in New York City to support expedited deliveries; last year the e-commerce giant opened a "micromobility hub" in Berlin to deliver more than 1.5 million packages a year with the four-wheeled utility bikes. The latest U-mobility version features an uphill booster and electronic parking brake, and can carry loads up to about 550 pounds while rolling quietly through congested streets. E-cargo bikes, says Konrad Schlösser, managing director of micromobility, are about "investing in the attractiveness and long-term vitality of a city." **—Joe Mullich**

TRAVEL

ESR CRYOBOOST FOLDABLE 3-IN-1 MAGNETIC CHARGING STATION

Cooler (and quicker) wireless charging

This charging stand for iPhone, Apple Watch, and AirPods doesn't just support cutting-edge induction charging standard Qi2.2. "This design solves one of the biggest consumer frustrations when using wireless," says ESR senior director of product marketing Elsie Chu: charging time. The company's CryoBoost cooling technology uses open-duct airflow and a quiet, ultra-thin fan made of aerospace-grade aluminum to cool devices (instead of blowing on the charger itself, as most competitors do); it keeps things 4°C cooler than non-CryoBoost Qi2.2 products and therefore boosts your battery more quickly. It can juice an iPhone 16 Pro half an hour faster than rivals. **—Alison Van Houten**

ENTEGRA EMBARK EXTENDED ELECTRIC CLASS A MOTORHOME

RV paradigm shift

This full-size RV from industry powerhouse Thor Industries (under its Entegra brand) aims to shed RVs' gas-guzzling reputation. An all-new all-electric powertrain designed in collaboration with EV-maker Harbinger sets the vehicle apart. The Embark has an electric-only range of 105 miles; an integrated gas generator that recharges the battery extends its range to 450 miles. That's far higher than existing EV RVs, which have an average range of 125 miles; that "simply doesn't cut it for road warriors," says Todd Woelfer, Thor's senior vice president and COO. Entegra Embark will retail for over $300,000 when it goes on sale in 2026. **—Jeremy Gantz**

MANTA SOUND SLEEP MASK

Catch some Z's

The new version of Manta's Sound Sleep Mask is lighter, thinner, and more comfortable than its predecessor. Combining the company's proprietary full blackout, side-sleeper-friendly C-shaped eye cup design with built-in Bluetooth speakers over the ears, the mask lets users doze off to music, white noise, meditation apps, or a podcast. Co-founder and head of design Ben Schwarz says side sleepers won't feel anything pushing into their ear: "It's a very thin speaker component embedded in a foam sandwich." With 24 hours of playtime battery life, it's Manta's most advanced sleep mask to date. **—Jared Lindzon**

FAYE

Ultra-accessible travel insurance

It's 2 a.m. in Tokyo, and your luggage is MIA. Many travel insurance companies will make you wait weeks for reimbursement, if you can figure out how to file a claim. Faye, which only offers single-trip travel policies, will put money in your digital wallet instantly to buy replacement clothes or a new toothbrush. Beyond speedy payouts, Faye's app offers 24/7 concierge help and telemedicine access, and a new eSIM feature, added in January, provides cell service when traveling abroad. The company crossed $100 million in revenue this year, less than three years after launching in the U.S. **—Natasha Frost**

WEARABLE TECHNOLOGY

META RAY-BAN DISPLAY

A leap forward for smart glasses

Mark Zuckerberg's September demonstration of Meta's Ray-Ban Display and its accompanying Neural Band didn't go off without some hitches—the tech glitched a few times on stage—but the wearables are impressive. A 600-by-600 pixel display on the right lens can field texts and calls without pulling out your phone. The unique electromyography (EMG) wristband receives electrical signals from the twitches in forearm muscles, letting users pinch and pull windows and tap out messages innocuously. The Neural Band lasts 18 hours between charges; the glasses—prescription or non—last six. It feels a world away from where the technology was just a few years ago. **—Chris Stokel-Walker**

NEUROVIGIL IBRAIN

A portable, AI-driven brain monitor

Once a research prototype used by Stephen Hawking, NeuroVigil's iBrain formally launched in 2024 as an investigational device in four U.S. states. The wireless EEG device that can be worn at home captures brain activity, using AI to map biomarkers that may signal conditions like apnea, Parkinson's, brain cancer, or drug side effects long before symptoms appear. Backed by an $85 million Series B that valued the company at $6 billion, the rollout builds on earlier work with Roche and Novartis. "The idea is if we do the AI right, you actually don't have to be in the brain" to diagnose problems with it, says founder Dr. Philip Low, whose father's health struggles inspired his pursuit of preventive neuroscience. **—Aimee Groth**

OZLO SLEEPBUDS

Self-adjusting sleep system

Most sleep gadgets just track slumber. Ozlo's tiny, squishy bluetooth earbuds are smarter, adjusting to your sleep. You can listen to audiobooks or playlists until accelerometers in the buds detect you've dozed off. Then they pivot to noise-cancellation, and the charging case—filled with noise, temperature, and light sensors—logs how you sleep, offering recommendations for change. "We maximized the charging case to do more than just charge," says co-founder N.B. Patil, who previously worked for Bose. Next up, Patil wants the case to talk to smart thermostats, auto-tweaking bedroom temperatures when its sensors flag restless sleep. The SleepBuds qualify for HSA/FSA reimbursement. **—Chris Stokel-Walker**

GARMIN INDEX SLEEP MONITOR

Smart armband

Wrist-worn sleep-tracking devices can be uncomfortable to wear overnight. Fitness-focused brand Garmin's Index Sleep Monitor, released in June, takes a different tack. The machine-washable fabric band is worn on the upper arm, where it tracks sleep stages, heart rate variability, breathing variations, and skin temperature. Its "smart wake alarm" gently wakes users with a vibration during a lighter sleep stage within their preferred wakeup window. Then the device sends the night's data and a personalized sleep score to the companion smartphone app, where users can learn "how prepared they are to take on the day," says Garmin's Susan Lyman.

—Matt Alderton

OURA RING 4

Always on

The latest smart ring from the Finnish company that pioneered the category has more than twice as many signal pathways as its predecessor, enabling more complete and accurate readings of physiological data. The ring introduces Oura's "smart sensing" technology, which captures blood oxygen levels, heart and respiratory rates, skin temperature changes, and movement. In December 2024, two months after launching Oura 4, the company introduced its subscription-based Symptom Radar, which identifies early signs in a user's biometric data of common respiratory infections like the flu or a cold.

—Matt Alderton

Disclosure: Investors in Oura include TIME owner and co-chair Marc Benioff.

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Consumer Marketing Maya Draisin

ON THE COVER

Top row: *Hyperice & Nike Hyperboot, Nintendo Switch 2* ***Middle row:*** *Mattel Barbie You Create, Wildtype Salmon Saku, Sway TPSea Flex* ***Bottom row:*** *Wisp Male BV Partner Treatment, Dreo TurboPoly Fan 707S, Louisville Slugger Pro Prime TPD1*

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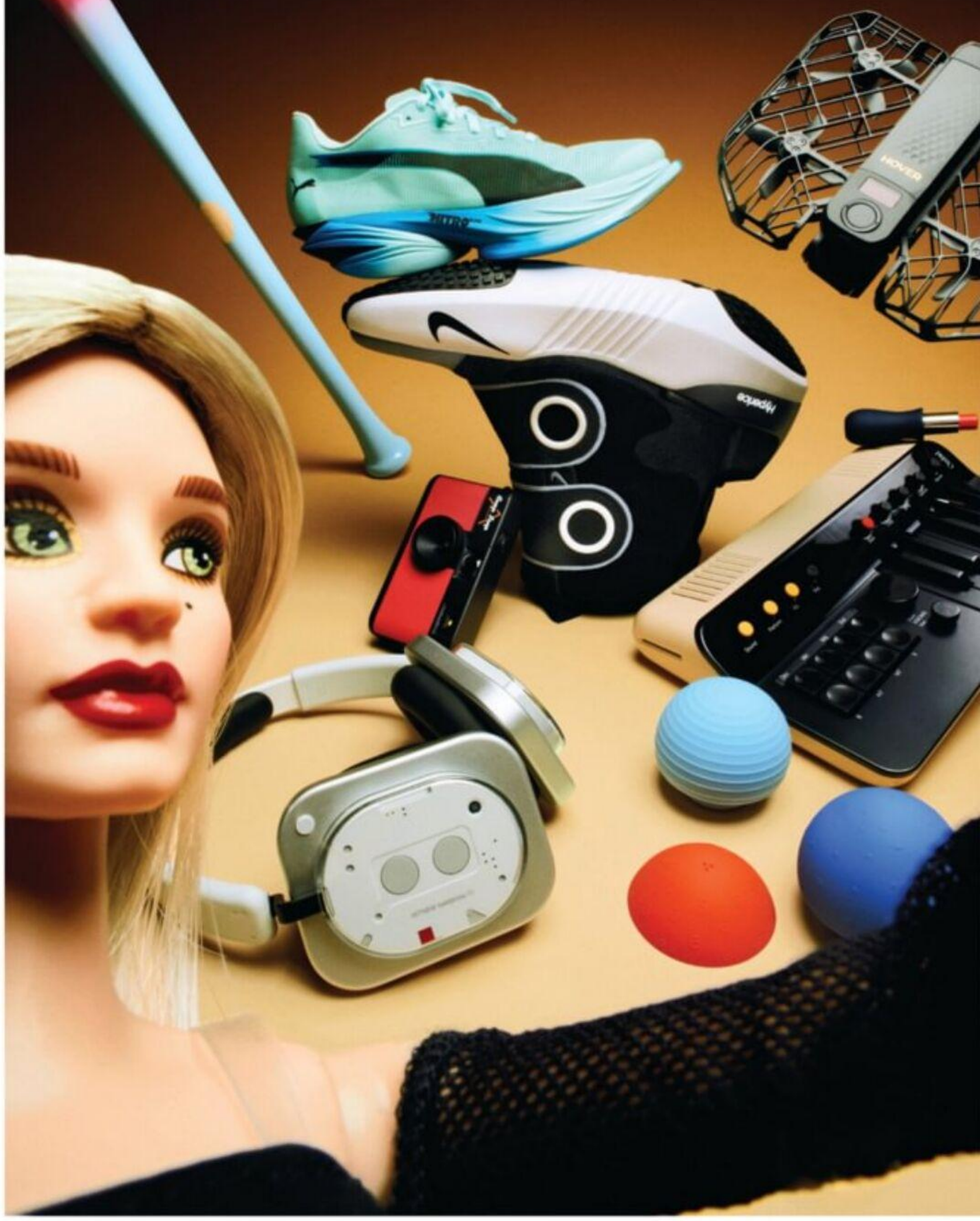

SPECIAL TIME EDITION

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For over two decades, TIME has recognized the products, software, and services shaping our world—from breakthroughs in science and technology to innovations that make daily life smarter, easier, and more sustainable. Each year, TIME editors assemble a collection of the world's most groundbreaking inventions. These are the winners for 2025.